

Installation Guide

hp StorageWorks HA-Fabric Manager Server

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First Edition (August 2003)

Part Number: AA-RU5FA-TE/958-000324-000

This document provides instructions to perform initial setup and configuration of the HP-supplied one rack unit high (1U) server. This document also describes backup and restore procedures, install and upgrade procedures, HAFM server-specific diagnostics, and how to optionally rack-mount the HAFM server in a standard, customer-supplied, 19-inch equipment cabinet.



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HA-Fabric Manager Server Installation Guide
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about this guide

This installation guide provides information to help you:

- Set up and connect the one rack unit (1U) high rack-mount HA-Fabric Manager (HAFM) server.
- Configure HAFM server features.
- Back up and restore the HAFM server.
- Install the HAFM server and its slide-out shelf into a supported equipment cabinet.
- Install or upgrade HAFM software.
- Troubleshoot and resolve HAFM server and application problems.

“About this Guide” topics include:

- [Overview](#), page 10
- [Conventions](#), page 11
- [Rack Stability](#), page 14
- [Getting Help](#), page 15

Overview

This section covers the following topics:

- [Intended Audience](#)
- [Related Documentation](#)

Intended Audience

This book is intended for use by administrators and technicians who are experienced with the following:

- Fibre Channel technology.
- StorageWorks Fibre Channel switches by Hewlett-Packard.

Related Documentation

For a list of corresponding documentation, see the Related Documents section of the Release Notes that came with this product.

For the latest information, documentation, and firmware releases, please visit the HP StorageWorks website:

<http://h18006.www1.hp.com/storage/saninfrastructure.html>

For information about Fibre Channel standards, visit the Fibre Channel Industry Association website, located at:

<http://www.fibrechannel.org>

Conventions

Conventions consist of the following:

- [Document Conventions](#)
- [Text Symbols](#)
- [Equipment Symbols](#)

Document Conventions

The document conventions included in [Table 1](#) apply in most cases.

Table 1: Document Conventions

| Element | Convention |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Cross-reference links | Blue text: Figure 1 |
| Key and field names, menu items, buttons, and dialog box titles | Bold |
| File names, application names, and text emphasis | <i>Italics</i> |
| User input, command and directory names, and system responses (output and messages) | Monospace font COMMAND NAMES are uppercase monospace font unless they are case sensitive |
| Variables | <monospace, italic font> |
| Website addresses | Blue, underlined sans serif font text: http://www.hp.com |

Text Symbols

The following symbols may be found in the text of this guide. They have the following meanings:



WARNING: Text set off in this manner indicates that failure to follow directions in the warning could result in bodily harm or death.



Caution: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or data.

Note: Text set off in this manner presents commentary, sidelights, or interesting points of information.

Equipment Symbols

The following equipment symbols may be found on hardware for which this guide pertains. They have the following meanings:



Any enclosed surface or area of the equipment marked with these symbols indicates the presence of electrical shock hazards. Enclosed area contains no operator serviceable parts.

WARNING: To reduce the risk of personal injury from electrical shock hazards, do not open this enclosure.



Any RJ-45 receptacle marked with these symbols indicates a network interface connection.

WARNING: To reduce the risk of electrical shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into this receptacle.



Any surface or area of the equipment marked with these symbols indicates the presence of a hot surface or hot component. Contact with this surface could result in injury.

WARNING: To reduce the risk of personal injury from a hot component, allow the surface to cool before touching.



Power supplies or systems marked with these symbols indicate the presence of multiple sources of power.

WARNING: To reduce the risk of personal injury from electrical shock, remove all power cords to completely disconnect power from the power supplies and systems.



Any product or assembly marked with these symbols indicates that the component exceeds the recommended weight for one individual to handle safely.

WARNING: To reduce the risk of personal injury or damage to the equipment, observe local occupational health and safety requirements and guidelines for manually handling material.

Rack Stability

Rack stability protects personnel and equipment.



WARNING: To reduce the risk of personal injury or damage to the equipment, be sure that:

- The leveling jacks are extended to the floor.
 - The full weight of the rack rests on the leveling jacks.
 - In single rack installations, the stabilizing feet are attached to the rack.
 - In multiple rack installations, the racks are coupled.
 - Only one rack component is extended at any time. A rack may become unstable if more than one rack component is extended for any reason.
-

Getting Help

If you still have a question after reading this guide, contact an HP authorized service provider or access our website: <http://www.hp.com>.

HP Technical Support

Telephone numbers for worldwide technical support are listed on the following HP website: <http://www.hp.com/support/>. From this website, select the country of origin.

Note: For continuous quality improvement, calls may be recorded or monitored.

Be sure to have the following information available before calling:

- Technical support registration number (if applicable)
- Product serial numbers
- Product model names and numbers
- Applicable error messages
- Operating system type and revision level
- Detailed, specific questions

HP Storage Website

The HP website has the latest information on this product, as well as the latest drivers. Access storage at: <http://www.hp.com/country/us/eng/prodserv/storage.html>. From this website, select the appropriate product or solution.

HP Authorized Reseller

For the name of your nearest HP authorized reseller:

- In the United States, call 1-800-345-1518
- In Canada, call 1-800-263-5868
- Elsewhere, see the HP website for locations and telephone numbers: <http://www.hp.com>.

Initial Setup

1

HAFM Server Description

The HAFM server (Figure 1) is a one rack unit (1U) high rack-mount device with the *High Availability Fabric Manager* (HAFM) application installed. HAFM provides a graphical user interface (GUI) for operating and managing the Directors and Edge Switches.

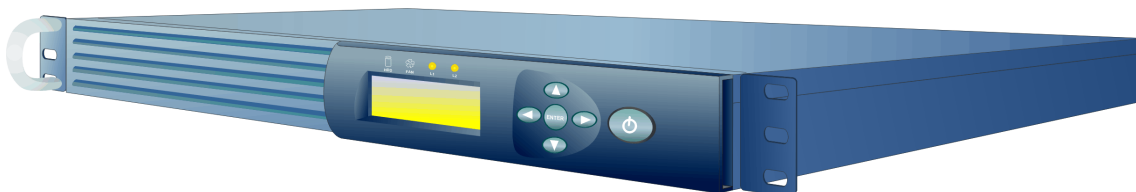


Figure 1: HAFM server

The HAFM server also includes a *TightVNC Viewer* version 1.2.7 client-server software control package that provides remote network access (through a standard web browser) to the server desktop, enabling remote users to manage the Directors and Edge Switches using the HAFM and Product Manager applications. For information about the *TightVNC Viewer*, refer to www.tightvnc.com.

Note: The HAFM server and related applications provide a GUI to monitor and manage Directors and Edge Switches, and are a dedicated hardware and software solution that should not be used for other tasks. HP tests the HAFM application installed on the HAFM server, but does not compatibility test other third-party software. Modifications to the HAFM server hardware or installation of additional software (including patches or service packs) are not supported, and may interfere with normal operation.

Kit Contents

The 1U high rack-mount HAFM server kit includes:

- HAFM server
- Universal rack-mount kit
- Ten (10) square alignment washers (required for rack-mounting in HP 9000, 10000 and 11000 series racks)
- HAFM application CD-ROM
- HAFM boot/restore CD-ROM
- Norton AntiVirus™ CD-ROM
- HAFM software license certificate
- CD-RW (blank)
- HAFM Release Notes
- 10-ft. Ethernet cable
- PDU power cord
- 110-volt AC power cord
- Null modem cable
- Modem phone cable
- Generic documentation for the HAFM server

Front Panel Features

Figure 2 shows the HAFM server front panel indicators and controls.

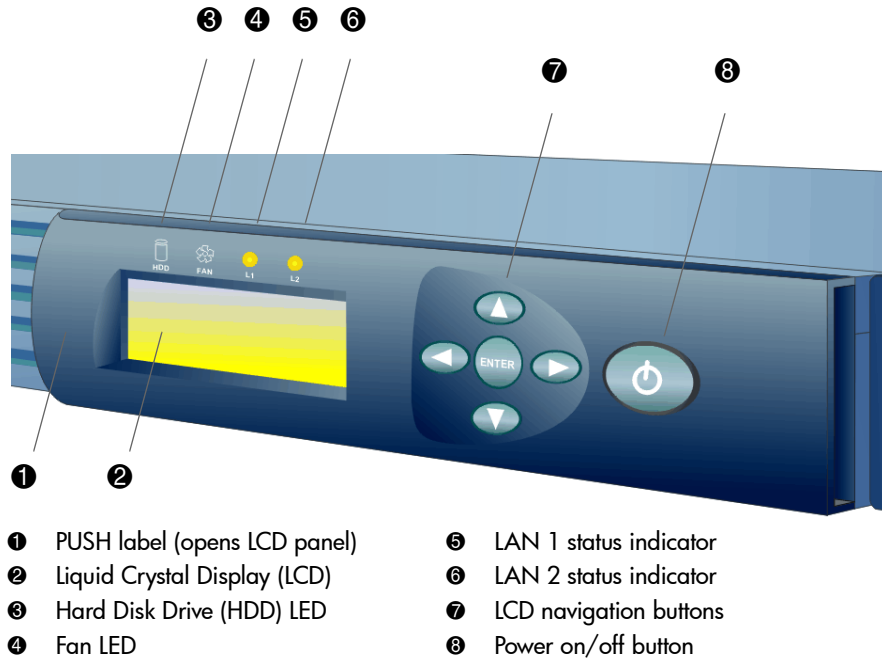


Figure 2: HAFM server front panel features

Factory Defaults

Table 2 lists factory-set defaults for the 1U high rack-mount HAFM server.

Table 2: Factory-Set Defaults (HAFM Server)

| Item | | Default |
|----------------------------------------------------------|-----------------|---------------|
| Liquid crystal display (LCD) front panel password | | 9999 |
| Windows 2000 operating system user name (case sensitive) | | Administrator |
| Windows 2000 operating system password (case sensitive) | | password |
| HAFM application user name (case sensitive) | | Administrator |
| HAFM application password (case sensitive) | | password |
| LAN 1 (public interface) | IP address | 192.168.0.1 |
| | Subnet mask | 255.0.0.0 |
| | Gateway address | 0.0.0.0 |
| LAN 2 (private interface) | IP address | 10.1.1.1 |
| | Subnet mask | 255.0.0.0 |
| | Gateway address | 0.0.0.0 |

Verify Installation Requirements

Verify the following requirements are met prior to HAFM server installation. Ensure that:

- HP recommends that a site plan is prepared, configuration planning tasks are completed, planning considerations are evaluated, and related planning checklists are completed.
- Fabric and device connectivity are evaluated, and the related planning worksheet is complete. Refer to the *HP StorageWorks SAN High Availability Planning Guide*.
- A browser-capable PC and LAN segment connectivity to the HAFM server to support switch management through the HAFM application is available.
- Support equipment and technical personnel are available for the installation.
- A customer-supplied 19-inch equipment rack and associated hardware are available (optional).

Unpack and Inspect the HAFM Server

Unpack, inspect, and install the HAFM server as follows:

1. Inspect the shipping container for damage caused during transit. If a container is damaged, ensure a representative from the freight carrier is present when the container is opened.
2. Unpack the shipping container and inspect each item for damage. Ensure the packaged items correspond to the items listed on the enclosed bill of materials.
3. If any items are damaged or missing, contact a Hewlett-Packard authorized service provider or reseller.
4. Perform one of the following:
 - For a desktop installation, position the HAFM server on a table or desktop as directed by the customer. Ensure a grounded AC electrical outlet is available.
 - For a cabinet installation, open the rack-mount kit and inspect the contents. Refer to the enclosed bill of materials and verify all parts are delivered.

Connect the HAFM Server

You can connect the HAFM server to the single customer-supplied corporate Ethernet LAN, with or without an HP-supplied Ethernet hub. This allows remote sessions to the HAFM server from anywhere on the corporate LAN, provides access to manage the Directors and Edge Switches on this LAN, and allows access to applications such as *HP OpenView Storage Area Manager*.

Optionally, you can configure a separate dedicated private LAN between the HAFM server, and the Directors and Edge Switches that it manages.

Note: The dedicated private LAN precludes the use of the *HP OpenView Storage Area Manager* application.

Before connecting the HAFM server, ensure that it is positioned in its final installation location on a table or desktop, or installed in an equipment cabinet, as described in “[Rack Mount Instructions](#)” on page 89.

1. Connect the HAFM server to the customer’s corporate intranet (public LAN interface). To connect the HAFM server:
 - a. As shown in [Figure 3](#), connect one end of a customer-supplied Ethernet patch cable to the left RJ-45 adapter (LAN 1) at the rear of the server.
 - b. Connect the remaining end of the Ethernet cable to the corporate intranet as directed by the customer’s network administrator.

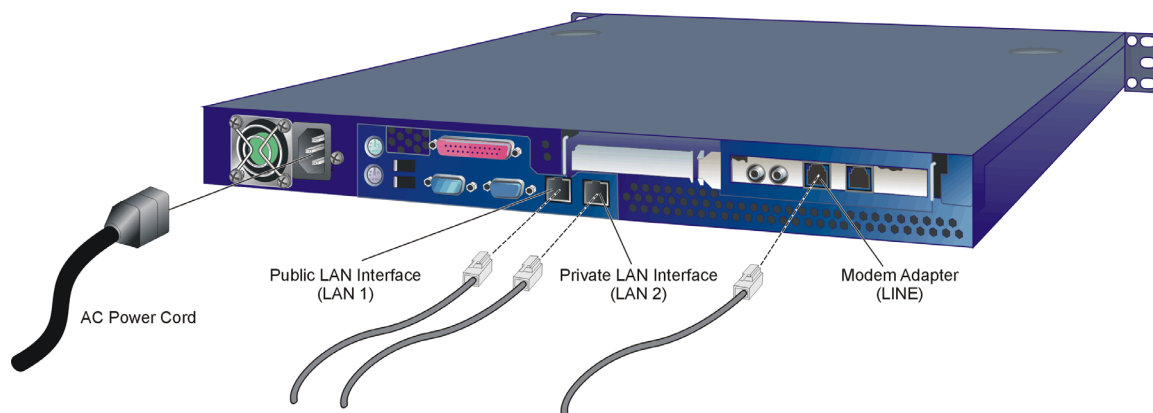


Figure 3: 1U HAFM server connections

2. If required, connect the HAFM server to the customer-supplied Ethernet LAN segment or HP-supplied Ethernet hub (private LAN interface). To connect the HAFM server:
 - a. As shown in [Figure 3](#), connect one end of the Ethernet patch cable (supplied with the HAFM server) to the right RJ-45 adapter (LAN 2) at the rear of the server.
 - b. Connect the remaining end of the Ethernet cable to the LAN as follows:
 - If the HAFM server is installed on a customer-supplied LAN segment, connect the cable to the LAN as directed by the customer's network administrator.
 - If the HAFM server is installed on the HP-supplied Ethernet hub, connect the cable to any available hub port.
3. As shown in [Figure 3](#), connect the phone cord to the left RJ-11 adapter (LINE) at the rear of the server and to a facility telephone connection.

Power On the HAFM Server

To power on the HAFM server:

1. As shown in [Figure 3](#), connect the AC power cord to the server and to a facility power source or rack power strip that provides single-phase, 90 to 264 VAC current.

When the power cord is connected, the HAFM server powers on and performs power-on self-tests (POSTs). During POSTs:

- The green liquid crystal display (LCD) panel illuminates.
- The green hard disk drive (HDD) LED blinks momentarily, and processor speed and random-access memory information display momentarily at the LCD panel.
- After a few seconds, the LCD panel displays the following message pertaining to boot sequence selection ([Figure 4](#)):

Boot from LAN?
Press <Enter>

Figure 4: LCD panel during boot sequence

2. Ignore the message. After ten seconds, the server performs the boot sequence from the basic input/output system (BIOS). During the boot sequence, the server performs additional POSTs and displays the following operational information at the LCD panel:

- Host name.
- System date and time.
- LAN 1 and LAN 2 IP addresses.
- Central processing unit (CPU) temperature.
- Hard disk capacity.
- Virtual and physical memory capacity.

After successful POST completion, the LCD panel displays a `Welcome!!` message, then continuously cycles through and displays server operational information.

3. If a POST error or other malfunction occurs, refer to “[HAFM Server Diagnostics](#)” on page 119 to isolate the problem.

Configuration

2

This chapter describes how to configure the HAFM server, and includes the following topics:

- [Configure HAFM Server Password and Network Addresses](#) on page 26
- [Configure HAFM Server Information](#) on page 38
- [Configure Windows 2000 Users](#) on page 48
- [Set HAFM Server Date and Time](#) on page 55
- [Configure and Enable Event Notification Features](#) on page 57
- [Test Remote Notification](#) on page 72
- [Assign User Names and Passwords](#) on page 73
- [Record or Verify HAFM Server Restore Information](#) on page 77

Configure HAFM Server Password and Network Addresses

Verify the type of LAN installation with the customer's network administrator. If the HAFM server or equipment cabinet is installed on a dedicated LAN, network information does not require change. Change the default password for the server's LCD panel (if required by the customer), then go to "[Configure HAFM Server Information](#)" on page 38.

If the HAFM server or equipment cabinet is installed on a public LAN segment, the default password for the server's LCD panel and the following transmission control protocol internet protocol (TCP/IP) network information must be changed to conform to the customer's LAN addressing scheme:

- IP address.
- Subnet mask.

Note: At some customer installations, TCP/IP addresses for the HAFM server may be allocated automatically using dynamic host configuration protocol (DHCP).

Configure Password

To configure a new LCD panel password:

1. At the HAFM server's LCD panel, press **ENTER**. The `Welcome!!` or operational information message changes to the following ([Figure 5](#)):

A rectangular box representing the LCD panel. Inside, the text "Input Password:" is on the first line, and "0****" is on the second line, indicating the first digit is entered and the rest are masked.

Input Password:
0****

Figure 5: LCD panel (password entry)

2. Using the **▲** button to increment a digit, the **▼** button to decrement a digit, the **◀** button to move the cursor left, and the **▶** button to move the cursor right, input the default password (9999), and press **ENTER**. The `LAN 1 Setting??` message displays at the LCD panel.

3. Press the ▼ button several times until the Change Password? option displays at the LCD panel, then press **ENTER**. The following message displays (Figure 6):



New Password:
0****

Figure 6: LCD panel (new password)

4. Use the arrow keys as described in [step 2](#) to input a new 4-digit numeric password, then press **ENTER**. The following message displays (Figure 7):



Save Change?
Yes, Save !!

Figure 7: LCD panel (save change)

5. Press **ENTER**. A Wait a moment! message displays at the LCD panel, the LCD panel returns to the LAN 1 Setting?? message, and the password changes.

Note: Be sure to record your password and keep it in a safe location.

Configure Public LAN Addresses

Note: Before starting this procedure, ensure that the LAN 1 interface is physically connected to the LAN. An LCD display of 0.0.0.0 indicates a physical LAN connection is not present.

You can configure the public LAN connection (LAN 1) using one of the following methods:

- Use Dynamic Host Control Protocol (DHCP) to assign the HAFM server IP address, subnet mask, and default gateway IP address. You can either auto-detect or manually select the DNS server IP address.
- Manually enter the HAFM server IP address, subnet mask, default gateway IP address, and DNS server IP address.

Configure Public LAN Addresses Using DHCP

To configure TCP/IP network information for the public LAN connection (LAN 1) using DHCP:

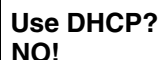
1. At the HAFM server's LCD panel, press **ENTER**. The `Welcome!!` or operational information message changes to the following (Figure 8):



Input Password:
0****

Figure 8: LCD panel (password entry)

2. Using the **▲** button to increment a digit, the **▼** button to decrement a digit, the **◀** button to move the cursor left, and the **▶** button to move the cursor right, input the default or changed password, and press **ENTER**. The `LAN 1 Setting??` message displays at the LCD panel.
3. Press **ENTER** and the following message displays (Figure 9) to allow the selection of DHCP.



Use DHCP?
NO!

Figure 9: LCD panel (DHCP selection)

4. Use the up and down arrow keys as described in [step 2](#) and select **YES** to use DHCP and press **ENTER**. The following message displays ([Figure 10](#)):



Auto Get DNS?
NO!

Figure 10: LCD panel (auto get DNS)

5. Do one of the following:
 - Use the up and down arrow keys as described in [step 2](#) to select **YES** and press **ENTER**. The DNS address is auto-detected and recorded. Proceed to [step 7](#).
 - Select **NO** by pressing **ENTER**. The following message displays ([Figure 11](#)):



Input DNS:
000.000.000.000

Figure 11: LCD panel (DNS entry)

6. Use the up and down arrow keys as described in [step 2](#) to enter the IP address for the DNS server and press **ENTER**.
7. Verify the following message displays ([Figure 12](#)):



Save Change?
Yes, Save !!

Figure 12: LCD panel (save change)

8. Press **ENTER**. A `Wait a moment!` message displays at the LCD panel.
9. Press the up and down arrow keys until `Return?` is displayed and press **ENTER**. The LCD panel returns to scrolling mode, which continually displays HAFM server operational information.

Manually Configure Public LAN Addresses

To manually configure TCP/IP network information for the public LAN connection (LAN 1):

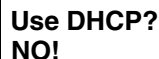
1. At the HAFM server's LCD panel, press **ENTER**. The `Welcome!!` or operational information message changes to the following (Figure 13):



Input Password:
0****

Figure 13: LCD panel (password entry)

2. Using the **▲** button to increment a digit, the **▼** button to decrement a digit, the **◀** button to move the cursor left, and the **▶** button to move the cursor right, input the default or changed password, and press **ENTER**. The `LAN 1 Setting??` message displays at the LCD panel.
3. Press **ENTER** and the following message displays (Figure 14) to allow the selection of DHCP.



Use DHCP?
NO!

Figure 14: LCD panel (DHCP selection)

4. Press **ENTER** to select the default (**NO**). The the following message displays (Figure 15) with the default IP address of 192.168.0.1.



Input IP:
192.168.000.001

Figure 15: LCD panel (LAN 1 IP address)

5. Use the arrow keys as described in [step 2](#) to input a new IP address, then press **ENTER**. The following message displays (Figure 16):



Save Change?
Yes, Save !!

Figure 16: LCD panel (save change)

6. Press **ENTER**. The LAN 1 IP address changes and the following message displays (Figure 17) with the default subnet mask of 255.0.0.0.



Input Netmask:
255.000.000.000

Figure 17: LCD panel (LAN 1 subnet mask)

7. Use the arrow keys as described in [step 2](#) to input a new subnet mask, then press **ENTER**. The following message displays (Figure 18):



Save Change?
Yes, Save !!

Figure 18: LCD panel (save change)

8. Press **ENTER**. The subnet mask changes and the following message displays (Figure 19) with the default gateway IP address of 0.0.0.0.



Input Gateway:
000.000.000.000

Figure 19: LCD panel (LAN 1 gateway)

9. Use the arrow keys as described in [step 2](#) to input the gateway IP address, then press **ENTER**. The following message displays (Figure 20):



Save Change?
Yes, Save !!

Figure 20: LCD panel (save change)

10. Press **ENTER**. The gateway IP address changes and the following message displays (Figure 21) with the DNS server IP address of 0.0.0.0.



Input DNS:
000.000.000.000

Figure 21: LCD panel (LAN 1 DNS)

11. Use the arrow keys as described in [step 2](#) to input the DNS server IP address, then press **ENTER**. The following message displays ([Figure 22](#)):

Save Change?
Yes, Save !!

Figure 22: LCD panel (save change)

12. Press **ENTER**. A `Wait a moment!` message displays at the LCD panel.
13. Press the up and down arrow keys until `Return?` is displayed and press **ENTER**. The LCD panel returns to scrolling mode, which continually displays HAFM server operational information.
14. Record the public LAN IP address, subnet mask, gateway IP address, and DNS server IP address for reference in case these settings need to be restored.

Configure Private LAN Addresses

Note: Before starting this procedure, ensure that the LAN 2 interface is physically connected to the LAN. An LCD display of 0.0.0.0 indicates a physical LAN connection is not present.

You can configure the private LAN connection (LAN 2) using one of the following methods:

- Use Dynamic Host Control Protocol (DHCP) to assign the HAFM server IP address, subnet mask, and default gateway IP address. You can either auto-detect or manually select the DNS server IP address.
- Manually enter the HAFM server IP address, subnet mask, default gateway IP address, and DNS server IP address.

Configure Private LAN Addresses Using DHCP

To configure TCP/IP network information for the private LAN connection (LAN 2) using DHCP:


1. At the HAFM server's LCD panel, press **ENTER**. The `Welcome!!` or operational information message changes to the following (Figure 23):



Input Password:
0****

Figure 23: LCD panel (password entry)

2. Using the **▲** button to increment a digit, the **▼** button to decrement a digit, the **◀** button to move the cursor left, and the **▶** button to move the cursor right, input the default or changed password, and press **ENTER**. The `LAN 2 Setting??` message displays at the LCD panel.
3. Press **ENTER** and the following message displays (Figure 24) to allow the selection of DHCP.



Use DHCP?
NO!

Figure 24: LCD panel (DHCP selection)

4. Use the up and down arrow keys as described in [step 2](#) and select **YES** to use DHCP and press **ENTER**. The following message displays ([Figure 25](#)):

Auto Get DNS?
NO!

Figure 25: LCD panel (auto get DNS)

5. Do one of the following:
 - Use the up and down arrow keys as described in [step 2](#) to select **YES** and press **ENTER**. The DNS address is auto-detected and recorded. Proceed to [step 7](#).
 - Select **NO** by pressing **ENTER**. The following message displays ([Figure 26](#)):

Input DNS:
000.000.000.000

Figure 26: LCD panel (DNS entry)

6. Use the up and down arrow keys as described in [step 2](#) to enter the IP address for the DNS server and press **ENTER**.
7. Verify the following message displays ([Figure 27](#)):

Save Change?
Yes, Save !!


Figure 27: LCD panel (save change)

8. Press **ENTER**. A `Wait a moment!` message displays at the LCD panel.
9. Press the up and down arrow keys until `Return?` is displayed and press **ENTER**. The LCD panel returns to scrolling mode, which continually displays HAFM server operational information.

Manually Configure Private LAN Addresses

To manually configure TCP/IP network information for the private LAN connection (LAN 2):

1. At the HAFM server's LCD panel, press **ENTER**. The `Welcome!!` or operational information message changes to the following (Figure 28):



Input Password:
0****

Figure 28: LCD panel (password entry)

2. Using the **▲** button to increment a digit, the **▼** button to decrement a digit, the **◀** button to move the cursor left, and the **▶** button to move the cursor right, input the default or changed password, and press **ENTER**. The `LAN 2 Setting??` message displays at the LCD panel.
3. Press **ENTER** and the following message displays (Figure 29) to allow the selection of DHCP.



Use DHCP?
NO!

Figure 29: LCD panel (DHCP selection)

4. Press **ENTER** to select the default (**NO**). The the following message displays (Figure 30) with the default IP address of 10.1.1.1.



Input IP:
10.001.001.001

Figure 30: LCD panel (LAN 2 IP address)

5. Use the arrow keys as described in [step 2](#) to input a new IP address, then press **ENTER**. The following message displays (Figure 31):



Save Change?
Yes, Save !!

Figure 31: LCD panel (save change)

6. Press **ENTER**. The LAN 2 IP address changes and the following message displays (Figure 32) with the default subnet mask of 255.0.0.0.

Input Netmask:
255.000.000.000

Figure 32: LCD panel (LAN 2 subnet mask)

7. Use the arrow keys as described in [step 2](#) to input a new subnet mask, then press **ENTER**. The following message displays (Figure 33):

Save Change?
Yes, Save !!

Figure 33: LCD panel (save change)

8. Press **ENTER**. The subnet mask changes and the following message displays (Figure 34) with the default gateway IP address of 0.0.0.0.

Input Gateway:
000.000.000.000

Figure 34: LCD panel (LAN 2 gateway)

9. Use the arrow keys as described in [step 2](#) to input the gateway IP address, then press **ENTER**. The following message displays (Figure 35):

Save Change?
Yes, Save !!

Figure 35: LCD panel (save change)

10. Press **ENTER**. The gateway IP address changes and the following message displays (Figure 36) with the DNS server IP address of 0.0.0.0.

Input DNS:
000.000.000.000

Figure 36: LCD panel (LAN 2 DNS)

11. Use the arrow keys as described in [step 2](#) to input the DNS server IP address, then press **ENTER**. The following message displays ([Figure 37](#)):

Save Change?
Yes, Save !!

Figure 37: LCD panel (save change)

12. Press **ENTER**. A `Wait a moment!` message displays at the LCD panel.
13. Press the up and down arrow keys until `Return?` is displayed and press **ENTER**. The LCD panel returns to scrolling mode, which continually displays HAFM server operational information.
14. Record the private LAN IP address, subnet mask, gateway IP address, and DNS server IP address for reference in case these settings need to be restored.

Configure HAFM Server Information

Configure the computer name and workgroup name for the HAFM server. Configure these parameters from the server's Windows 2000 operating system, using a LAN-attached PC with standard web browser.

If required, change the HAFM server's gateway addresses and domain name system (DNS) server IP addresses to conform to the customer's LAN addressing scheme. The gateway addresses are the addresses of the local router for the corporate intranet.

Access the HAFM Server Desktop

To log in and access the HAFM server desktop:

1. Ensure the HAFM server and a browser-capable PC are connected through an Ethernet LAN segment. At the PC, launch the browser application (*Netscape Navigator* or *Internet Explorer*).
2. At the PC browser, enter the IP address of the HAFM server for the HAFM LAN to which the PC is connected (LAN 1 or LAN 2), followed by :5800, as the Internet uniform resource locator (URL). Enter the URL in the following format:

`http://xxx.xxx.xxx.xxx:5800`

Where **xxx.xxx.xxx.xxx** is the default IP address or the IP address configured while performing [Configure HAFM Server Password and Network Addresses](#) on page 26. The **VNC Authentication** screen displays ([Figure 38](#)).

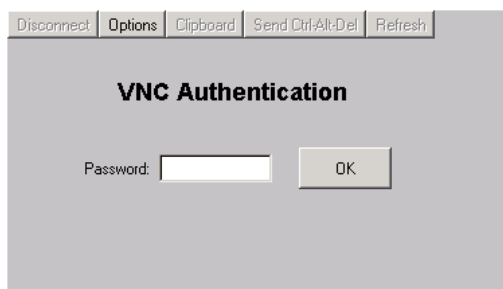


Figure 38: VNC Authentication screen

3. Type the default password and click **OK**. The **Welcome to Windows** dialog box displays.

Note: The default TightVNC viewer password is **password**.



Figure 39: Welcome to Windows dialog box

4. Click the **Send Ctrl-Alt-Del** button at the top of the window to log on to the HAFM server desktop. The **Log On to Windows** dialog box displays (Figure 40).

Note: Do not simultaneously press the **Ctrl**, **Alt**, and **Delete** keys. This action logs the user on to the browser-capable PC, not the rack-mount HAFM server.



Figure 40: Log On to Windows dialog box

5. Type the default Windows 2000 user name and password and click **OK**. The HAFM server's Windows 2000 desktop opens and the **HAFM Login** dialog box displays (Figure 41).

Note: The default Windows 2000 user name is **Administrator** and the default password is **password**. The user name and password are case-sensitive.



Figure 41: HAFM Login dialog box

Install Anti-Virus Software

A Norton AntiVirus software CD-ROM is included in the HAFM server kit contents to provide virus protection for the HAFM server.

To install the anti-virus software:

1. At the front of the HAFM server, press the left edge (PUSH label) of the LCD panel to disengage the panel and expose the CD-RW drive.
2. Insert Norton AntiVirus software CD-ROM into the CD-RW drive and close the LCD panel.
3. Follow the instructions provided on-screen to complete the installation and activate the anti-virus application.

Note: Once you have installed the software, you should obtain regular updates to the application and virus data files from the software vendor. See the vendor documentation and help files for more information.

Insert the Re-Writable CD in the CD-RW Drive

A blank re-writable CD is included in the HAFM server kit contents to provide back up and restore functionality for HAFM server.

To insert the blank CD in the HAFM server's CD-RW drive:

1. At the front of the HAFM server, press the left edge (PUSH label) of the LCD panel to disengage the panel and expose the CD-RW drive.
2. Insert a blank re-writable CD into the CD-RW drive (required for back up and restore functionality) and close the LCD panel.

For more information, see [Backup and Restore](#) on page 79.

Configure HAFM Server Names

To configure the HAFM server name and workgroup name:

1. At the Windows 2000 desktop, click **Start** at the left side of the task bar (bottom of the desktop), then choose **Settings**, then **Control Panel**. The **Control Panel** window displays (Figure 42).

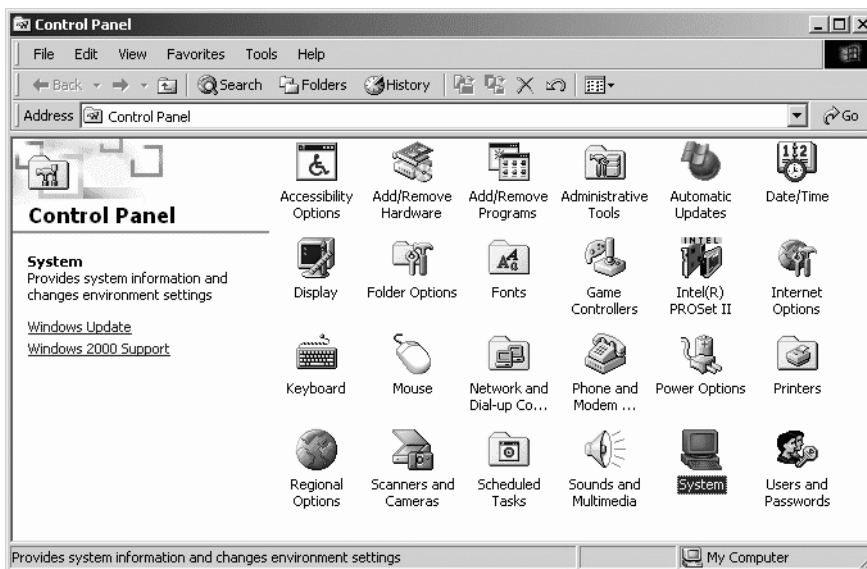


Figure 42: Control Panel window

2. Double-click the **System** icon. The **System Properties** dialog box displays with the **General** tab selected as the default.
3. Click the **Network Identification** tab. The **System Properties** dialog box displays with the **Network Identification** tab selected (Figure 43).

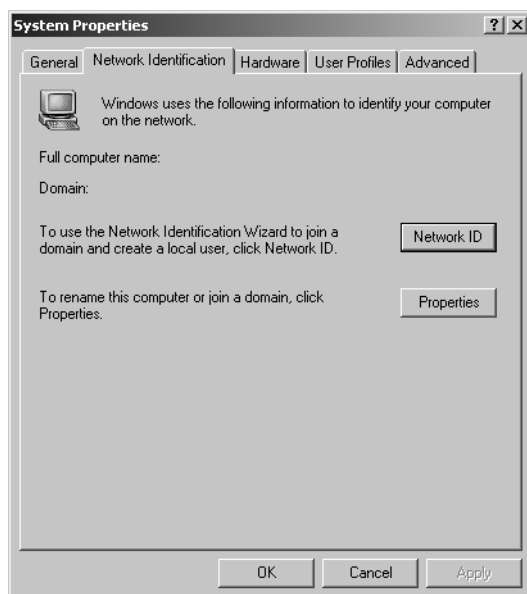


Figure 43: System Properties dialog box (Network Identification tab)

4. Click **Properties**. The **Identification Changes** dialog box displays (Figure 44).

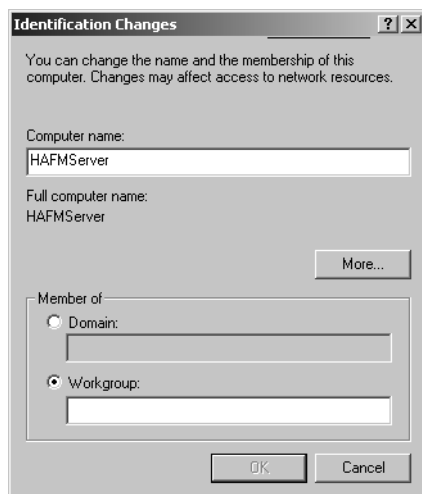


Figure 44: Identification Changes dialog box

5. If required, change the name from the default of HAFMSERVER to another name in the **Computer Name** field.
6. If required, change the name in the **Workgroup** field to WORKGROUP (or another name).
7. Click **OK**. The dialog box closes.
8. Record the computer and workgroup names for reference if the HAFM server hard drive fails and must be restored.
9. At the **System Properties** dialog box, click **OK** to close the dialog box and return to the **Control Panel** window.
10. Click close (**X**) at the upper right corner of the **Control Panel** window to return to the Windows 2000 desktop.

Configure Gateway and DNS Server Addresses

Note: These settings were configured using the LCD panel during the initial setup described in [“Configure Public LAN Addresses”](#) on page 28 and [“Configure Private LAN Addresses”](#) on page 33.

This section describes how to configure or verify gateway IP addresses and DNS server IP addresses for the public LAN connection (LAN 1) and optional private LAN connection (LAN 2) using Windows 2000 dialog boxes:

1. At the Windows 2000 desktop, click **Start** at the left side of the task bar, then choose **Settings**, then **Control Panel**. The **Control Panel** window displays ([Figure 42](#) on page 42).
2. Double-click the **Network and Dial-up Connections** icon. The **Network and Dial-up Connections** window displays ([Figure 45](#)).

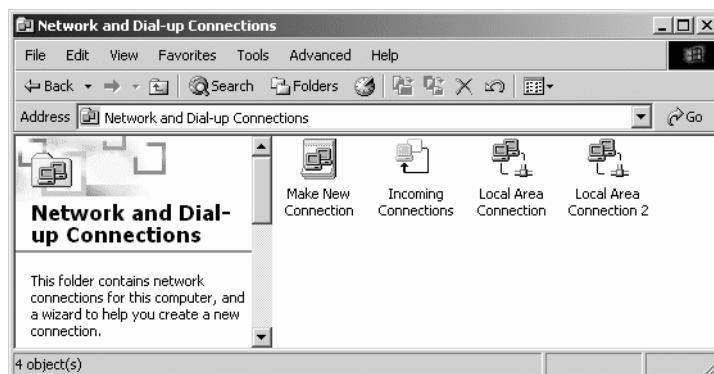


Figure 45: Network and Dial-up Connections window

3. To configure addresses for the public LAN connection (LAN 1), double-click the **Local Area Connection** icon. The **Local Area Connection 1 Status** dialog box displays (Figure 46).

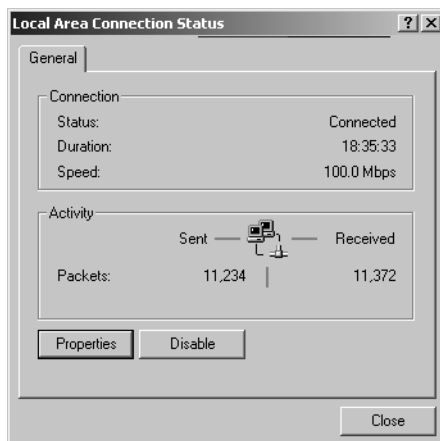


Figure 46: Local Area Connection Status dialog box

4. Click **Properties**. The **Local Area Connection Properties** dialog box displays (Figure 47).

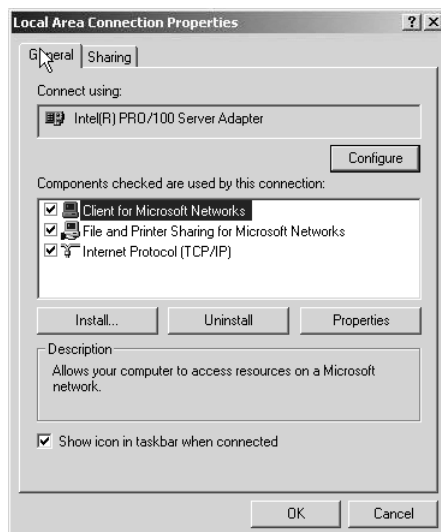


Figure 47: Local Area Connection 1 Properties dialog box

5. Double-click the **Internet Protocol (TCP/IP)** entry. The **Internet Protocol (TCP/IP) Properties** dialog box displays (Figure 48).

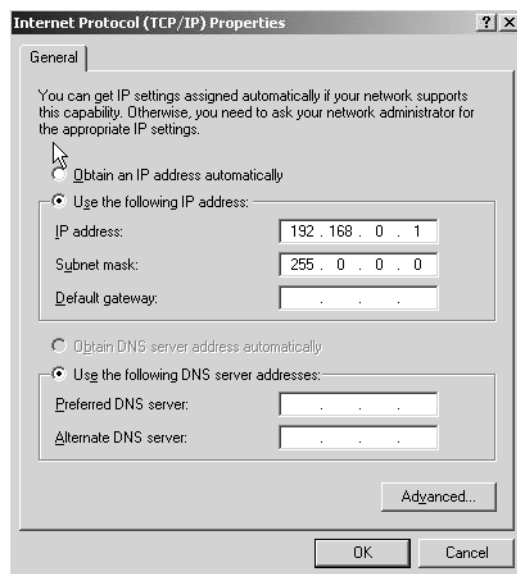


Figure 48: Internet Protocol (TCP/IP) Properties dialog box

6. The **Use the following IP address** radio button is enabled and the **IP address** and **Subnet mask** fields display network information configured while performing “[Configure HAFM Server Password and Network Addresses](#)” on page 26.
7. At the **Default gateway** field, enter the gateway address obtained from the customer’s network administrator.
8. Click (enable) the **Use the following DNS server addresses** radio button. At the **Preferred DNS server** field, enter the DNS server IP address obtained from the customer’s network administrator, then click **OK** to apply the changes and close the dialog box.
9. Click **OK** to close the **Local Area Connection 1 Properties** dialog box.
10. Record the changed gateway and DNS server addresses for reference if the HAFM server hard drive fails and must be restored.
11. To configure addresses for the private LAN connection (LAN 2), double-click the **Local Area Connection 2** icon and repeat [step 3](#) through [step 10](#) of this procedure.
12. Click close (X) at the upper right corner of the **Network and Dial-up Connections** window to return to the Windows 2000 desktop.
13. Reboot the HAFM server:
 - a. At the Windows 2000 desktop, click **Start** at the left side of the task bar, then choose **Shut down**. The **Shut Down Windows** dialog box displays.
 - b. At the **Shut Down Windows** dialog box, choose the **Restart** option and click **OK** to reboot the server.
 - c. Perform the steps described in “[Access the HAFM Server Desktop](#)” on page 38.

Configure Windows 2000 Users

Configure password access for all authorized Windows 2000 users of the HAFM server. It is also recommended to change the default administrator password. To configure users:

1. At the Windows 2000 desktop, click **Start** at the left side of the task bar, then choose **Settings**, then **Control Panel**. The **Control Panel** window displays (Figure 42 on page 42).
2. Double-click the **Users and Passwords** icon. The **Users and Passwords** dialog box displays (Figure 49).

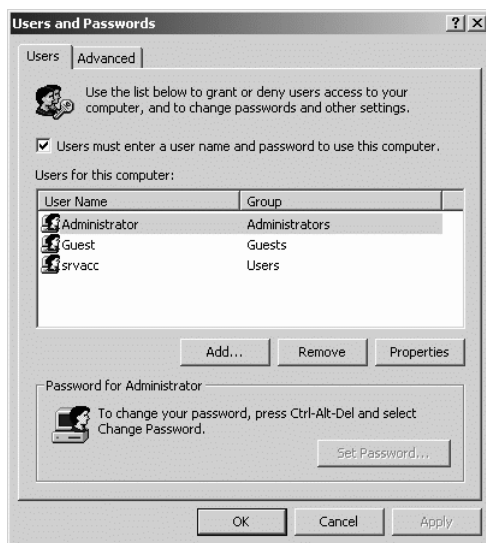


Figure 49: Users and Passwords dialog box

Note: The **Guest** user name is a built-in account in the Windows 2000 operating system and cannot be deleted. The 'srvacc' account is for field service users and must not be modified or deleted.

Change Default Administrator Password

To change the administrator password from the default (password) to a customer-specified password:

1. Click the **Send Ctrl-Alt-Del** button at the top of the window surrounding the **Users and Passwords** dialog box. The **Windows Security** dialog box displays (Figure 50).

Note: Do not simultaneously press the **Ctrl**, **Alt**, and **Delete** keys. This action controls the browser-capable PC, not the rack-mount HAFM server.



Figure 50: Windows Security dialog box

2. Click **Change Password**. The **Change Password** dialog box displays (Figure 51).



Figure 51: Change Password dialog box

3. At the **Old Password** field, type the old password. At the **New Password** and **Confirm New Password** fields, type the new password.

Note: The **New Password** and **Confirm New Password** fields are case-sensitive.

4. Click **OK**. A confirmation message displays.
5. Click **OK**.
6. Click **Cancel** at the **Windows Security** dialog box to return to the **Users and Passwords** dialog box.

Add a New User

To set up a new Windows 2000 user:

1. At the **Users and Passwords** dialog box, click **Add**. The first window of the **Add New User** wizard displays (Figure 52).

The screenshot shows the 'Add New User' wizard window. The title bar reads 'Add New User'. On the left is a dark vertical panel with a white icon of a computer monitor. The main area has a light gray background. At the top, it says 'Enter the basic information for the new user.' Below this are three text input fields labeled 'User name:', 'Full name:', and 'Description:'. Underneath these fields, it says 'To continue, click Next.' At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

Figure 52: Add New User wizard (first window)

2. Type the appropriate new user information in the **User name**, **Full name**, and **Description** fields, then click **Next**. The second window of the **Add New User** wizard displays (Figure 53).

The screenshot shows the second window of the 'Add New User' wizard. The title bar reads 'Add New User'. On the left is a dark vertical panel with a white icon of a computer monitor. The main area has a light gray background. At the top, it says 'Type and confirm a password for this user.' Below this are two text input fields labeled 'Password:' and 'Confirm password:'. Underneath these fields, it says 'To continue, click Next.' At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'.

Figure 53: Add New User wizard (second window)

3. Type the new user's password in the **Password** and **Confirm password** fields, then click **Next**. The third window of the **Add New User** wizard displays (Figure 54).



Figure 54: Add New User wizard (third window)

4. Based on the level of access to be granted, click the **Standard user**, **Restricted user**, or **Other** radio button. If the **Other** radio button is selected, choose the type of access from the adjacent list box.
5. Click **Finish**. The new user information is added and the wizard closes. Record the user information for reference if the HAFM server hard drive fails and must be restored.
6. If no other users are to be added, click **OK** to close the **Users and Passwords** dialog box.
7. Click close (**X**) at the upper right corner of the **Control Panel** window to return to the Windows 2000 desktop.

Change User Properties

To change an existing user's properties:

1. At the **Users and Passwords** dialog box, highlight the user (srvacc, for example) at the **Users for this computer** field and click **Properties**. The **HAFMSERVER\srvacc Properties** dialog box displays with the **General** tab selected (Figure 55).



Figure 55: HAFMSERVER\srvacc Properties dialog box (General tab)

2. Type the appropriate new user information in the **User name**, **Full name**, and **Description** fields, then click the **Group Membership** tab. The **HAFMSERVER\srvacc Properties** dialog box displays with the **Group Membership** tab selected (Figure 56).

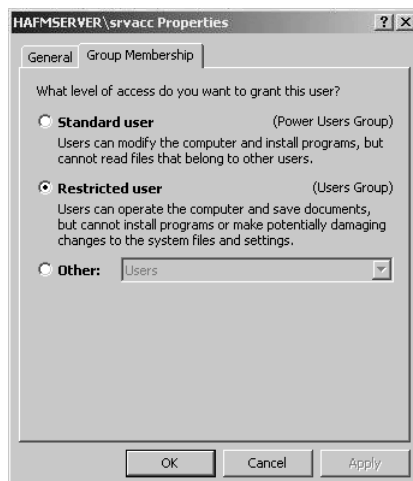


Figure 56: HAFMSERVER\srvacc Properties dialog box (Group Membership tab)

3. Based on the level of access to be changed, click the **Standard user**, **Restricted user**, or **Other** radio button. If the **Other** radio button is selected, choose the type of access from the adjacent list box.
4. Click **OK**. The new user information is added and the **HAFMSERVER\srvacc Properties** dialog box closes. Record the user information for reference if the HAFM server hard drive fails and must be restored.
5. If no other users are to be changed, click **OK** to close the **Users and Passwords** dialog box.
6. Click close (**X**) at the upper right corner of the **Control Panel** window to return to the Windows 2000 desktop.

Set HAFM Server Date and Time

The HAFM's audit and event logs are time-stamped with the date and time from the HAFM server. The switch's system clock is synchronized with date and time of the HAFM server by default. To set the date and time on the HAFM server:

1. At the Windows 2000 desktop, click **Start** at the left side of the task bar, then choose **Settings**, then **Control Panel**. The **Control Panel** window displays (Figure 42 on page 42).
2. Double-click the **Date/Time** icon. The **Date/Time Properties** dialog box displays with the **Date & Time** page open (Figure 57).

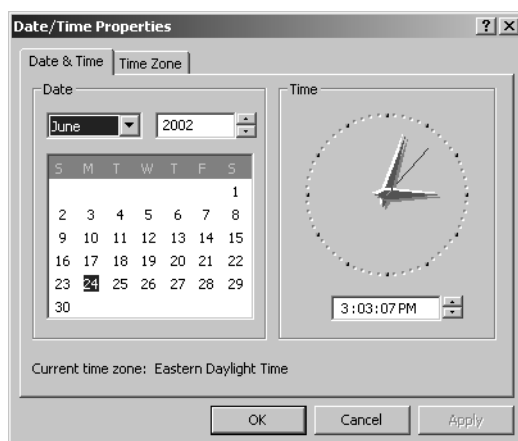


Figure 57: Date/Time Properties dialog box (Date & Time tab)

Note: The **Time Zone** field must be set before the **Date & Time** field.

3. Click the **Time Zone** tab. The **Date/Time Properties** dialog box displays with the **Time Zone** page open (Figure 58).



Figure 58: Date/Time Properties dialog box (Time Zone tab)

4. To change the time zone:
 - a. Choose the appropriate time zone from the drop-down list at the top of the dialog box.
 - b. If instructed by the customer's system administrator, click the **Automatically adjust clock for daylight saving changes** check box.
 - c. Click **Apply**. Record time zone and daylight savings information for reference if the HAFM server hard drive fails and must be restored.
5. Click the **Date & Time** tab. The **Date/Time Properties** dialog box displays with the **Date & Time** page open.
6. To change the date and time:
 - a. Choose the month from the drop-down list under **Date**.
 - b. Click the up or down arrow adjacent to the year field and select the desired year.
 - c. Click the day on the calendar to select the desired date.
 - d. Click in the time field and enter the desired time, then click the adjacent up or down arrow and select **AM** or **PM**.
 - e. Click **Apply**. Record date and time information for reference if the HAFM server hard drive fails and must be restored.
7. Click **OK** to close the **Date/Time Properties** dialog box.
8. Click close (**X**) at the upper right corner of the **Control Panel** window to return to the Windows 2000 desktop.

Configure and Enable Event Notification Features

The HAFM server provides the following event notification features:

- **Call-home via dial-out** - This feature provides automatic dial-out through the modem to a service support facility to report Director or Edge Switch problems. This functionality is provided in the shipped software.
- **Proactive Services call-home via LAN** - This feature reports events via the LAN to a SANworks Management Appliance or other server running the HP Proactive Services software.

HP Proactive Services software is offered at no additional charge for subsystems covered under an on-site warranty or on-site storage hardware support contract. To order Proactive Services software, contact your Hewlett-Packard customer service representative.

Note: You can choose only one of the two call-home options: call-home via dial-out or call-home via LAN. You can use either feature, but not both.

The HAFM server is shipped with the HAFM application installed and the call-home via dial-out feature selected by default. If you prefer to use the Proactive Services call-home via LAN feature, you must:

- Order the Proactive Services software.
- Uninstall the HAFM application.
- Reinstall the HAFM application.
- Select the call-home via LAN option during the HAFM application installation.

-
- **E-Mail event notification** - This feature enables you to configure up to five e-mail addresses to which event notifications are sent for the HAFM server, Directors and Edge Switches.

The following sections describe configuring event notification features:

- [Configure the Call-Home via Dial-Out Feature](#) on page 58
- [Configure Proactive Services Call Home via LAN Feature](#) on page 67
- [Configure E-Mail Event Notification](#) on page 69

Configure the Call-Home via Dial-Out Feature

The HAFM server has a call-home feature that provides automatic dial-out through the modem to a service support facility to report Director, Edge Switch, or HAFM server problems. The problem is logged into the support facility's tracking system for resolution.

Obtain Required Information

You must contact the nearest HP technical support location to obtain some required information prior to beginning this procedure.

Note: Before contacting technical support, please read through this section to familiarize yourself with the steps and information required.

Telephone numbers for worldwide technical support are listed on the HP website:

<http://www.hp.com/country/us/eng/support.html>

Required information includes:

- Call-home phone number
- Workflow Manager (WFM) site ID
- Super Region code
- User name
- Password

This information is required for the HAFM server to place a phone call to the service support facility.

You will be required to provide the following information to obtain this information:

- Company name
- Contact names for primary hours and alternate hours
- Phone numbers for contacts
- Company address

The HAFM server has a call-home feature that provides automatic dial-out through the internal modem to a service support facility to report switch problems. The problem is logged into the support facility's tracking system for resolution.

Configure Call Home

To configure the call-home feature:

1. There are two jacks on the HAFM server's internal modem: one for the call-home connection (LINE), and the other for a telephone (PHONE). Ensure a telephone cable is routed and connected to the LINE jack at the rear of the HAFM server (connected while performing "[Connect the HAFM Server](#)" on page 22).
2. At the Windows 2000 desktop, double-click the **Call-Home Setup** icon. The **Network and Dial-up Connections - CallHome.pbk** dialog box displays ([Figure 59](#)).



Figure 59: Network and Dial-up Connections - CallHome.pbk dialog box

3. Ensure the **Primary Support Center** selection displays at the **Choose a network connection** list box, then click **Properties**. The **Primary Support Center** dialog box displays ([Figure 60](#)).



Figure 60: Primary Support Center dialog box

4. Verify that the default **Area Code**, **Phone Number** and **Country/region code** reflect the information obtained in “[Obtain Required Information](#)” on page 58. If the phone number is different, enter the correct phone number.
5. Click **Rules**. The **Phone and Modem Options** dialog box displays, as shown in [Figure 61](#).

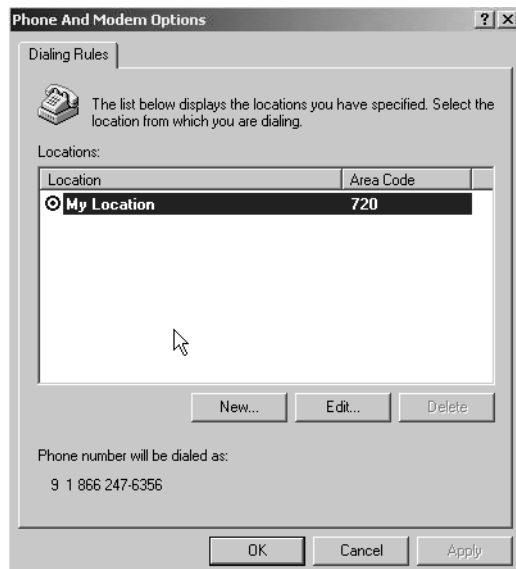


Figure 61: Phone and Modem Options dialog box

6. Select **New Location** and click **Edit**.

The Edit Location dialog box displays, as shown in [Figure 62](#).

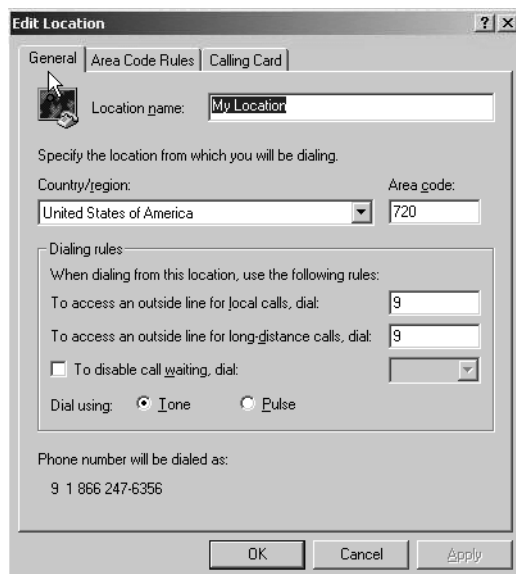


Figure 62: Edit Location dialog box

Complete the following steps:

- a. Enter a **Location name** and select the **Country/region**.
- b. Enter the **Area Code** and any outside line access information required by your facility.
- c. Click **OK**.

The **Phone and Modem Options** dialog box is still displayed, as shown in [Figure 61](#).

- d. Click **OK**.

The **Primary Support Center** dialog box is still displayed, as shown in [Figure 60](#).

- e. Click **OK**.

The **Network and Dial-Up Connections** dialog box is still displayed, as shown in [Figure 59](#).

7. Click **Dial**.

The **Connect Primary Support Center** dialog box displays, as shown in [Figure 63](#).

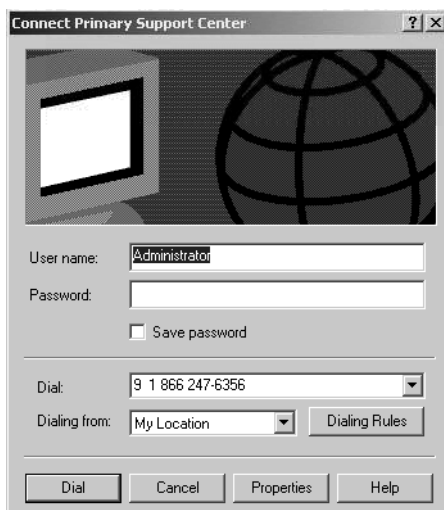


Figure 63: Connect Primary Support Center dialog box

Complete the following steps:

- a. Enter the **User name** and **Password** obtained in [“Obtain Required Information”](#) on page 58.
- b. Select the **Save password** option.
- c. Verify that the phone number in the **Dial** box is the call-home phone number provided in [“Obtain Required Information”](#) on page 58.

Note: The phone number listed in [Figure 63](#) is only an example. Also, depending on the properties you configured in [step 4](#), the format of the phone number in this dialog box may be different.

- d. Verify that the **Dialing from** box shows the location name created in [step 6](#).
- e. Click **Dial** to initiate a manual call.

The **Connect Primary Support Center** dialog box reduces in size and indicates it is dialing.

- f. Cancel the call by clicking **Cancel**. This stores the user name and password information for future call-home events.

The **Network and Dial-Up Connections** dialog box displays, as shown in [Figure 59](#).

- g. Click **Dial** and verify the user name is correct.

Note: The password may appear to have a different number of characters than the actual password. This is correct.

- h. Click **Cancel**.

The **Network and Dial-Up Connections** dialog box displays, as shown in [Figure 59](#). Click **Cancel** to close this dialog box.

Enable Call Home via Dial-Out

The HAFM server is now configured to automatically dial-out through the modem to a service support facility to report Director, Edge Switch, or HAFM server problems.

You must now enable the call-home feature on the HAFM server itself, as well as each Director and Edge Switch, through the HAFM application on the HAFM server. Also, identification information must be entered for each Director and Edge Switch to complete the call-home via modem configuration.

To enable the call-home feature on the HAFM server, Directors and Edge Switches:

1. Log in to HAFM (see “[Access the HAFM Server Desktop](#)” on page 38).

The HAFM main window displays, as shown in [Figure 64](#).

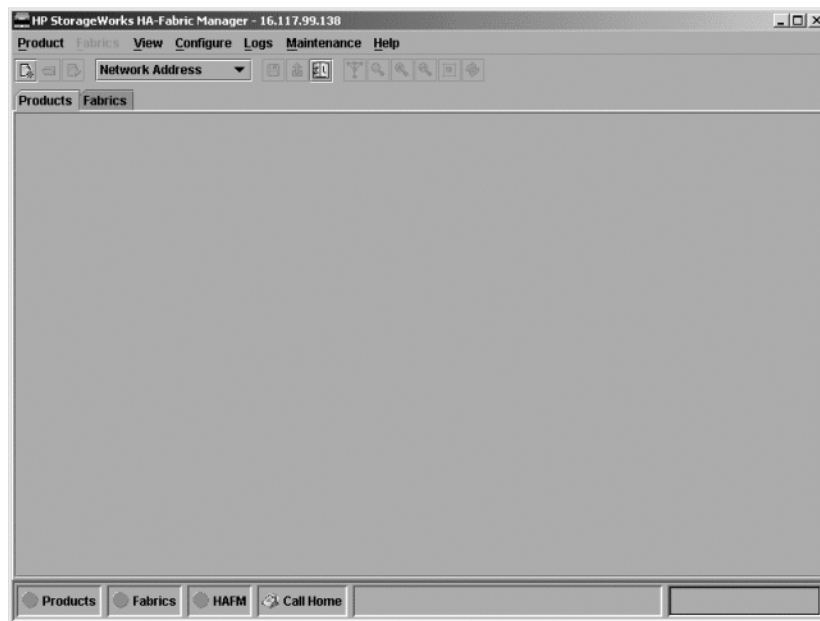


Figure 64: HAFM main window

2. Select **Maintenance > Configure Call Home Event Notification**.

The **HAFM: Configure Call Home Event Notification** dialog box displays, as shown in [Figure 65](#).

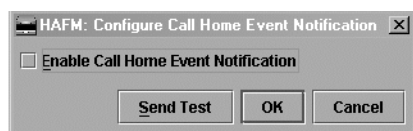


Figure 65: HAFM: Configure Call Home Event Notification dialog box

3. Place a check mark in the **Enable Call Home Event Notification** option. This enables the call-home function for the HAFM server, as well as for all Directors and Edge Switches that have also been enabled for call-home notification.

Configure Identification Information for Directors and Edge Switches

This procedure describes how to configure identification information for each Director and Edge Switch that is managed by the HAFM server.

Repeat this procedure for each Director or Edge Switch you want to configure for call-home event notification.

Note: In order for Directors and Edge Switches to be managed by the HAFM server, you must first add them using the HAFM application. Refer to the appropriate installation guide for your Director or Edge Switch for more information.

Complete the following steps for each Director or Edge Switch managed using HAFM:

1. From the HAFM main window, double-click on the icon for the device.
The **Hardware View** for the device is displayed.
2. On the menu bar, select **Configure > Identification**. The **Configure Identification** dialog box displays, as shown in [Figure 66](#).

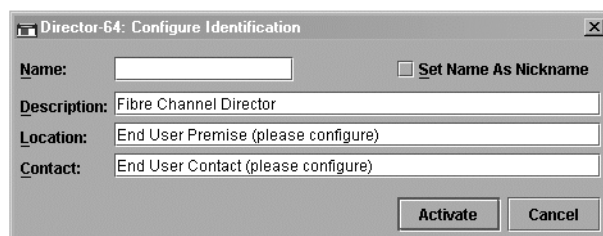


Figure 66: Configure Identification dialog box

3. Replace the default text with the following entries:

- **Name** - Enter a name for this Director or Edge Switch as appropriate for your SAN. Click **Set Name As Nickname**, which will display a check mark in the box. This will be the name that will be displayed with the icon for this Director or Edge Switch in the HAFM **Product View** and **Fabric View** displays.

- **Description** - Enter the address of your installation.

- **Location** - Enter the **WFM Site ID** and **Super Region code**, as obtained in “[Obtain Required Information](#)” on page 58. Separate each item with a “~” character, as shown in the following example:

US1234567890~AA

- **Contact** - Enter the contact name, phone number, and company name exactly as provided to HP in “[Obtain Required Information](#)” on page 58, separated by “~” (tilde) characters, as follows:

FirstName~LastName~PhoneNumber~CompanyName

For example:

Joe~Smith~5085551515~ABCCompany

4. Click **Activate**.

The **Configure Identification** dialog box closes and the Product Manager window at the **Hardware View** for this device is still displayed.

5. On the menu bar, select **Maintenance > Enable Call Home Notification**.
6. Place a check mark in the **Enable Call Home Event Notification** option.
7. See “[Test Remote Notification](#)” on page 72 for instructions on testing the call-home feature.

Configure Proactive Services Call Home via LAN Feature

The HAFM server call-home via LAN feature provides automatic event notification to a support center for reporting Director or Edge Switch problems. In order to report events, this feature requires the HAFM server to have a valid LAN connection to a SANWorks Management Appliance or other server running the HP Proactive Services software.

Note: To order Proactive Services software, contact your HP customer service representative.

Configure Call-Home via LAN on the HAFM Server

Use these steps to configure call-home on the HAFM server.

1. Verify that the HAFM server is connected to a LAN with access to the server running the HP Proactive Services software.
2. Locate the *rns.properties* file in the following location:

c:\Program Files\HAFM

Following is an example of file contents:

```
RnsDataDir=c:\HAFMData\RnsData
RnsEventDir=c:\HAFMData\RnsData
RnsLogDir=c:\HAFMData\Rnsdata
```

```
CSGIpAddress=
CSGPort=2069
CSGExePath=/ms/eventAsync
```

3. Using any ASCII text editor, make the following changes to the *rns.properties* file:
 - a. **CSGIpAddress**—Enter the IP address of the HP Services Gateway in appropriate format (xxx . xxx . xxx . xxx).

Note: No IP address is shown in the *rns.properties* file if this is the first time this is configured.

You should only need to enter an IP address for **CSGIpAddress**, unless default values were changed on the HP Services Gateway.

- b. **CSGPort**—The port that data is sent to on the HP Services Gateway. By default, the value is set at 2069.
 - c. **CSGExePath**—The executable path that is configured in conjunction with **CSGIpAddress** and **CSGPort**. By default, the path is set to `/ms/eventAsync`.
4. If you have changed the contents of the *rms.properties* file, reboot the HAFM server.

Note: Rebooting the HAFM server does not adversely effect the operation of Directors, Edge Switches, or the fabric.

Enable Call-Home via LAN

The HAFM server is now configured to automatically call-home through the LAN connection to a service support facility to report Director, Edge Switch, or HAFM server problems.

You must now enable the call-home feature on the HAFM server itself as well as each Director and Edge Switch through the HAFM application on the HAFM server.

To enable the call-home feature on the HAFM server:

1. Log in to HAFM (see “[Access the HAFM Server Desktop](#)” on page 38).
The HAFM main window displays, as shown in [Figure 64](#).
2. Select **Maintenance > Configure Call Home Event Notification**.
The **HAFM: Configure Call Home Event Notification** dialog box displays, as shown in [Figure 65](#).
3. Place a check mark in the **Enable Call Home Event Notification** option.
This enables the call home function for the HAFM server as well as for all Directors and Edge Switches that have also been enabled for call-home notification.

To enable the call-home feature on individual Directors and Edge Switches, perform the following for each Director and Edge Switch:

1. From the HAFM main window, double-click on the icon for the device.
The **Hardware View** for the device is displayed.
2. On the menu bar, select **Maintenance > Enable Call Home Notification**.
3. Place a check mark in the **Enable Call Home Event Notification** option.
4. See “[Test Remote Notification](#)” on page 72 for instructions on testing the call-home feature.

Configure E-Mail Event Notification

In addition to call-home functionality, notifications of many events can be sent via e-mail. You can configure up to five e-mail addresses for administrators or others who should be notified of significant product events.

The events that initiate e-mail event notification are specific to each managed product. Some examples of events that initiate e-mail event notification are:

- A change in system operational status.
- Problem detection, such as a failed field-replaceable unit (FRU).
- Problem correction.
- A change in state that requires user attention or that requires a report to a product administrator or service representative.

Configure E-Mail Event Notification for the HAFM Server

To configure e-mail event notification for the HAFM server:

1. From the HAFM main window, as shown in [Figure 64](#), select **Maintenance > Configure E-Mail**.

The **Enable E-Mail Event Notification** dialog box displays, as shown in [Figure 67](#).

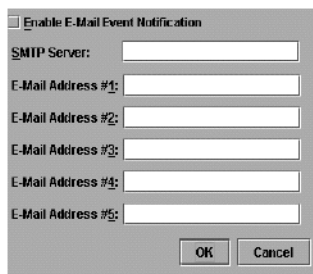


Figure 67: Enable E-Mail Event Notification dialog box

2. To enable or disable e-mail event notification, select the **Enable E-Mail Event Notification** check box.
3. Enter an IP address or DNS host name for your SMTP server. The SMTP server address can be up to 64 characters.
4. Enter up to five e-mail addresses for personnel who should be notified automatically of system events. The e-mail addresses can be up to 64 characters.
5. Click **OK** to confirm the information that you have entered.

This will enable e-mail event notification for all products managed by HAFM if e-mail event notification is enabled through each product's **Enable E-Mail Notification** option.

If the **Enable E-Mail Event Notification** check box is not selected, e-mail event notification is disabled for all products managed by HAFM.

Enable E-Mail Event Notification

You must enable the e-mail event notification option for each Director or Edge Switch in order for events from that product to generate an e-mail notification. The default state is disabled.

To enable e-mail event notification for a Director or Edge Switch:

1. From the HAFM main window, double-click on the icon for the device. The **Hardware View** for the device is displayed.
2. Select **Maintenance > Enable E-Mail Notification** to add a check mark in the check box which will enable e-mail event notification.
3. To disable e-mail event notification, choose the **Maintenance** menu on the menu bar, choose **Enable E-Mail Notification** to remove a check mark in the check box, which will disable e-mail event notification.
4. See “[Test Remote Notification](#)” on page 72 for instructions on testing the e-mail event notification feature.

Test Remote Notification

If e-mail event notification or one of the call-home notification features are enabled, set up the HAFM application to test these remote notification features. Because the features are configured at the HAFM application, call-home and e-mail event notification are enabled for multiple Directors and Edge Switches.

Note: Prior to testing remote notification, complete the steps in the previous sections:

- [Configure the Call-Home via Dial-Out Feature](#) on page 58
 - [Configure Proactive Services Call Home via LAN Feature](#) on page 67
 - [Configure E-Mail Event Notification](#) on page 69
-

To test remote notification:

1. Enable call-home event notification through the HAFM server.
 - a. In the **Products** or **Fabrics View** page, choose **Maintenance > Configure Call Home Event Notification**.
 - b. The **HAFM Configure Call Home Event Notification** dialog box displays.
 - If a check mark displays in the check box, call-home is enabled.
 - If a check mark does not display in the check box, click the box to add a check mark.
2. Open the **Products View** page. Choose **Maintenance > Test Remote Notification**. The **Test Remote Notification** dialog box displays, as shown in [Figure 68](#).



Figure 68: Test Remote Notification dialog box

3. Check the **Call Home** and **E-Mail** check boxes, depending on which features you want to test.

4. Click **Send Test**. Call-home and e-mail test messages are transmitted (depending on the features you chose to test) and an **Information** dialog box displays.
5. Click **OK**.
6. Depending on the features you are testing, verify that the test was successful:
 - Call-home—Confirm with the HP technical support representative assisting you with configuration of the call-home feature that the call-home test was successful.
 - E-mail event notification—Verify that the intended users received e-mail event notifications.

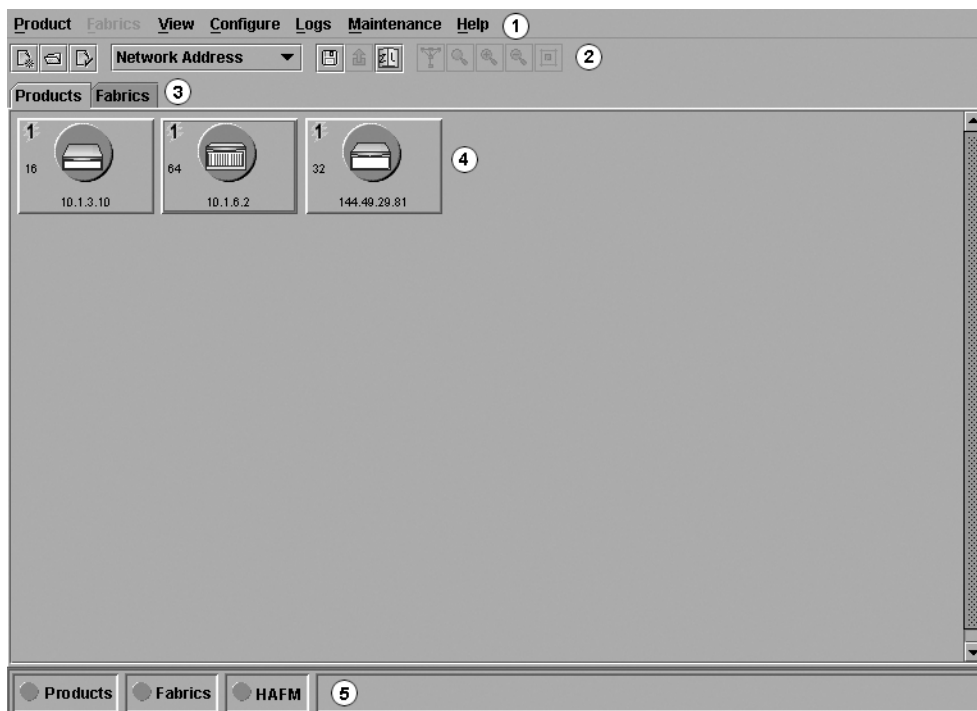
Assign User Names and Passwords

In addition to password access for the Windows 2000 operating system, users must be configured for access to the HAFM application. To assign HAFM user names and passwords:

1. At the **HAFM Login** dialog box, type the HAFM user name and password and select an HAFM server from the **HAFM Server** drop-down list.

Note: The default HAFM user name is **Administrator** and the default password is **password**. The user name and password are case-sensitive.

2. Click **Login**. The HAFM application opens and the **Products View** displays (Figure 69).



❶ Menu Bar

❷ Tool Bar

❸ View Tabs

❹ Main Panel

❺ Status Panel

Figure 69: Products View

3. Choose **Users** from the **Configure** menu. The **Configure Users** dialog box displays (Figure 70).

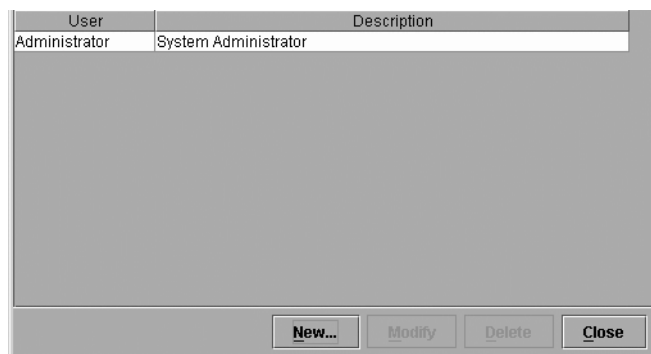


Figure 70: Configure Users dialog box

4. Click **New**. The **New User** dialog box displays (Figure 71).

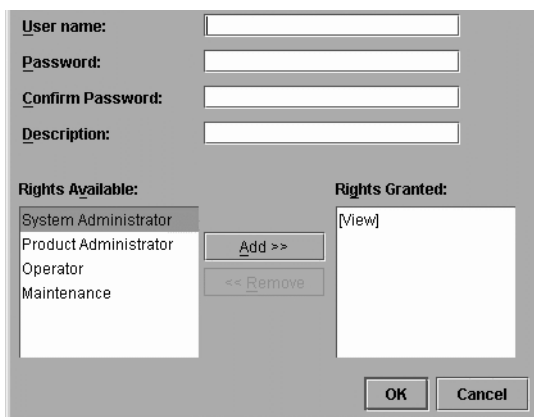


Figure 71: New User dialog box

5. Enter information in fields as directed by the customer:
 - **User name**—click in this field and type a new user name up to 16 alphanumeric characters in length. Control characters and spaces are not valid. The user name is case-sensitive.
 - **Password**—click in this field and type a password up to 16 alphanumeric characters in length. Control characters and spaces are not valid. The password is case-sensitive.

- **Confirm Password**—to confirm the password is entered correctly, click in this field and enter the password exactly as in the **Password** field. If an incorrect keystroke is entered, use the **Backspace** key to delete individual letters or select the entire entry and use the **Delete** key.
- **Description**—this information is optional. Type a user description, such as location, department, function, or other information. Enter a description of 64 characters or less. Control characters and spaces are not valid.
- **Rights Granted/Rights Available**—the **Rights Granted** field lists all rights categories granted to a user. For a new user, only **View** displays in the **Rights Granted** field. The **Rights Available** field lists all rights categories not granted to a user.

To grant rights, choose (highlight) a category in the **Rights Available** field and click **Add**.

To remove rights, choose (highlight) a category in the **Rights Granted** field, then click **Remove**. Since the **View** option is granted to all users, it cannot be removed from the **Rights Granted** field.

Note: For a description of rights categories available for users, refer to the *HP StorageWorks High Availability Fabric Manager User Guide*.

6. Click **OK** to accept the information.
7. Repeat [step 3](#) through [step 6](#) as required to assign multiple user names and passwords.
8. When finished, click **Close** in the **Configure Users** dialog box to return to the **Products View**.

Record or Verify HAFM Server Restore Information

Windows 2000 operating system configuration information must be recorded to restore the HAFM server in case of hard drive failure. Refer to “[Restore the HAFM Server](#)” on page 84.

Record or verify the following HAFM server configuration information:

1. Verify network configuration information is recorded. The information was recorded while performing “[Configure HAFM Server Password and Network Addresses](#)” on page 26 and “[Configure HAFM Server Information](#)” on page 38.
 - a. Verify the default LCD panel password (9999) or changed password is recorded.
 - b. Verify default or changed network addresses are recorded for the public LAN connection (LAN 1):
 - **IP address**—default is 192.168.0.1.
 - **Subnet mask**—default is 255.0.0.0.
 - **Gateway address**—default is blank.
 - **DNS server IP address**—default is blank.
 - c. Verify default or changed network addresses are recorded for the optional private LAN connection (LAN 2):
 - **IP address**—default is 10.1.1.1.
 - **Subnet mask**—default is 255.0.0.0.
 - **Gateway address**—default is blank.
 - **DNS server IP address**—default is blank.
 - d. Verify the default computer name (HAFMSERVER) or changed computer name is recorded.
2. Verify user passwords and other information are recorded. The information was recorded while performing “[Configure Windows 2000 Users](#)” on page 48.

3. Verify date and time information is recorded. The information was recorded while performing “[Set HAFM Server Date and Time](#)” on page 55.
 - a. Verify the time zone is recorded.
 - b. Verify if the HAFM server is set to automatically adjust the clock for daylight savings time changes.
4. Record the Product ID number as follows:
 - a. At the Windows 2000 desktop, click **Start** at the left side of the task bar, then choose **Settings**, then **Control Panel**. The **Control Panel** window displays.
 - b. Double-click the **System** icon. The **System Properties** dialog box displays with the **General** tab selected ([Figure 72](#)). Record the Product ID number listed under the **Registered to** heading.

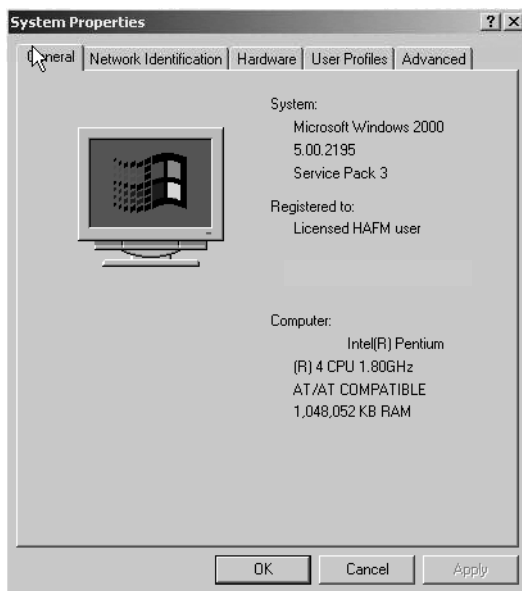


Figure 72: System Properties dialog box (General tab)

- c. Click **Cancel** to close the **System Properties** dialog box.
- d. Click close (X) at the upper right corner of the **Control Panel** window to return to the Windows 2000 desktop.

Backup and Restore

3

Backup of critical HAFM configuration data (contained in the `HafmData` directory) is provided by the HAFM server. The server is configured to automatically mirror the contents of the directory to the CD-RW drive any time directory contents change or the server is rebooted. The directory contains all HAFM configuration data, and is used to restore the HAFM server operating environment in case of hard drive failure. The `HafmData` directory contains:

- HAFM configuration data (switch definitions, user names and passwords, switch date and time, port configurations, operating parameters, SNMP recipients, and e-mail recipients).
- Log files (HAFM application logs and Director and Edge Switch Product Manager application logs).
- Switch firmware versions stored in the firmware library.
- Call-home configuration data.
- Configuration data for the switch is stored in nonvolatile random access memory (NV-RAM) on the switch's CTP card, and is backed up through the Product Manager application. The data is recorded in the `HafmData` directory when a backup is performed.

Back Up the HAFM Server

The server does not back up Windows 2000 operating system data, such as user names, passwords, date and time, and TCP/IP network information. This information was recorded while performing installation tasks, and verified while performing “[Record or Verify HAFM Server Restore Information](#)” on page 77.

To back up HAFM server configuration data and create a base HAFM Restore CD:

1. Insert a blank re-writable CD into the CD-RW drive and format the CD:
 - a. At the Windows 2000 desktop, locate the **InCD** icon at the right side of the task bar ([Figure 73](#)).

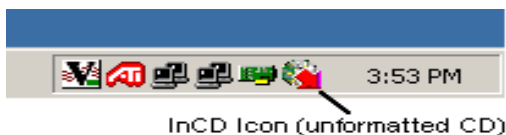


Figure 73: InCD icon (unformatted CD)

- b. Right-click the icon and select **Format (F)**. The first window of the **InCD** wizard displays ([Figure 74](#)).

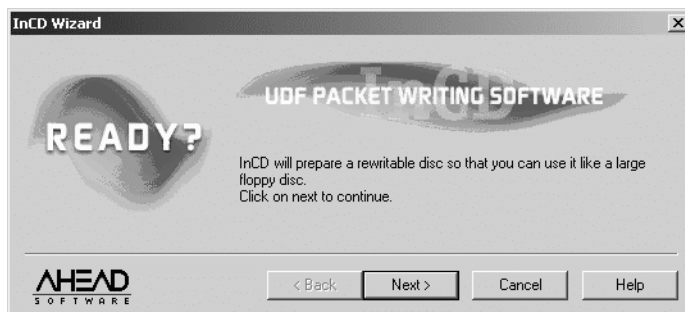


Figure 74: InCD wizard (first window)

- c. Click **Next** to proceed to the second window of the **InCD** wizard. Use the default parameters displayed at each window, and click **Next** and **Finish** as appropriate to complete the CD formatting task.
 - d. When the re-writable CD is formatted, the red down arrow associated with the **InCD** icon changes to a green up arrow ([Figure 75](#)).



Figure 75: InCD icon (formatted CD)

2. Back up the switch configuration file to the HAFM server.
 - a. Select **Backup and Restore Configuration** from the **Maintenance** menu on the menu bar to display the **Backup and Restore Configuration** dialog box.

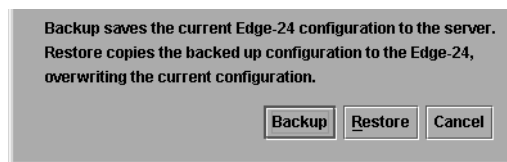


Figure 76: Backup and Restore dialog box

The **Backup and Restore** dialog box consists of a short description of the features performed when you select **Backup** or **Restore**.

Following is a list of configurations that are backed up to the HAFM server:

- Identification data (switch name, description, and location).
- Port configuration data (port names, blocked states, and extended distance settings).
- Operating parameters for fabric (E_D_TOV, R_A_TOV, switch priority, interop mode) and for switch (preferred domain ID, rerouting delay, and domain RSCNs).
- SNMP configuration (trap recipients, community names, and write authorizations).
- Zoning configuration (active zone set and default zone state).

- b. To backup data, click **Backup**.
- c. When the dialog box displays confirming that the backup of configuration is complete, click **OK**.

If the backup fails, a dialog box displays to inform you that the backup to the server failed.

3. If the **Hardware View** is open, close the view and return to the **Products View** by clicking close (X) at the upper right corner of the window.
4. Close the HAFM application by selecting **Exit** from the **Product** menu.
5. Reboot the HAFM server to cause HafmData directory contents to be written to the blank CD:
 - a. At the Windows 2000 desktop, click **Start** at the left side of the task bar (bottom of the desktop), then select **Shut Down**. The **Shut Down Windows** dialog box displays.
 - b. Select the **Restart** option from the list box and click **OK**. The HAFM server powers down and restarts. During the reboot process the LAN connection between the HAFM server and browser-capable PC drops momentarily, and the TightVNC viewer displays a network error as shown in [Figure 77](#).

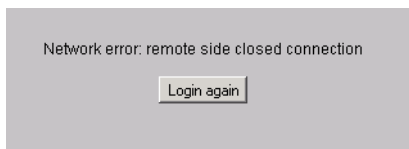


Figure 77: TightVNC network error message

- c. After the HAFM server reboots, click **Login again**. The **VNC Authentication** screen displays.
- d. Type the password and click **OK**. The **Welcome to Windows** dialog box displays.

Note: The default TightVNC viewer password is **password**.

- e. Click the **Send Ctrl-Alt-Del** button at the top of the window to log on to the HAFM server desktop. The **Log On to Windows** dialog box displays.

Note: Do not simultaneously press the **Ctrl**, **Alt**, and **Delete** keys. This action logs the user on to the browser-capable PC, not the rack-mount HAFM server.

- f. Type the Windows 2000 user name and password and click **OK**. The HAFM server's Windows 2000 desktop opens and the **HAFM Login** dialog box displays.

Note: The default Windows 2000 user name is **Administrator** and the default password is **password**. The user name and password are case-sensitive.

- g. Type the HAFM user name and password and select an HAFM server from the **HAFM Server** drop-down list.

Note: The default HAFM user name is **Administrator** and the default password is **password**. The user name and password are case-sensitive.

- h. Click **Login**. The HAFM application opens and the **Products View** displays ([Figure 69](#) on page 74).
6. Remove the base HAFM restore CD from the CD-RW drive and store the CD in a safe location. Insert a blank re-writable CD into the CD-RW drive and format the CD so that directory content changes can be recorded. Refer to [step 1](#) for formatting instructions.

Restore the HAFM Server

The procedure in this appendix provides information to restore the 1U rack-mount HAFM server after a failure of the server hard drive. The procedure includes restoration of the:

- Windows 2000 Professional operating system.
- Windows 2000 configuration information.
- HAFM application and Product Manager information for managed Directors and Edge Switches.
- HAFM data directory.

Requirements

The following are required to perform this procedure:

- HAFM restore CD-ROM – This CD-ROM is shipped with the HAFM server and contains the:
 - Disk operating system (DOS) files required to boot the PC after a hard drive failure.
 - Windows 2000 Professional operating system.
- *High Availability Fabric Management Applications* CD-ROM – This CD-ROM contains the HAFM and Product Manager applications.
- HAFM data directory backup on CD-ROM – The HAFM data directory is automatically backed up to a CD when the HAFM server is rebooted or when the data directory contents change. The data directory includes:
 - All HAFM configuration data (product definitions, user names, passwords, user rights, nicknames, session options, SNMP trap recipients, E-mail recipients, and Ethernet event notifications).
 - All log files (HAFM logs and individual Product Manager logs).
 - Zoning library (all zone set and zone definitions).
 - Firmware library.
 - Call-home settings.
 - Configuration data for each managed Edge Switch or Director (stored on the HAFM server and in NV-RAM on each switch).

- Windows 2000 configuration information – Windows 2000 network addresses, date and time information, user information, and the product identification are recorded during installation of the HAFM server. Refer to [“Record or Verify HAFM Server Restore Information”](#) on page 77 for information.

Procedure

To restore the rack-mount HAFM server:

1. At the front of the HAFM server, press the left edge (**PUSH** label) of the LCD panel to disengage the panel and expose the CD-RW drive.
2. Insert the *HAFM Server Restore* CD-ROM in the CD-RW drive and close the LCD panel.

Note: This procedure deletes all data from the C: hard drive partition.

3. Press the power button. The HAFM server powers on and performs the restore process from the CD-ROM.
4. After the restore process completes, the HAFM server makes an audible series of beeps. Remove the *HAFM Server Restore* CD from the CD-RW drive.
5. Power cycle the HAFM server. The HAFM server performs power-on self-tests (POSTs). After successful POST completion, the LCD panel displays a **Welcome!!** message, then continuously cycles through and displays server operational information.
6. Configure the following parameters at the server's LCD panel. Refer to [“Configure HAFM Server Password and Network Addresses”](#) on page 26 for instructions.
 - LCD panel password.
 - IP address for private and public LAN connections.
 - Subnet mask or private and public LAN connections.
 - Gateway address
 - DNS server address
7. Log on to the HAFM server's Windows 2000 desktop through a LAN connection to a browser-capable PC. Refer to [“Access the HAFM Server Desktop”](#) on page 38 for instructions.

8. Configure Windows 2000 configuration information:
 - Configure the computer name and workgroup name for the HAFM server. If required, change the server's gateway addresses and DNS server IP addresses to conform to the customer's LAN addressing scheme. Refer to "[Configure HAFM Server Information](#)" on page 38 for instructions.
 - Change the default Windows 2000 administrator password and configure password access for authorized users. Refer to "[Configure Windows 2000 Users](#)" on page 48 for instructions.
 - Set the HAFM server's date and time. Refer to "[Set HAFM Server Date and Time](#)" on page 55 for instructions.
 - Configure the event notification (call-home and e-mail notification) features. Refer to "[Configure and Enable Event Notification Features](#)" on page 57 for instructions.
9. Insert the *High Availability Management Applications* CD-ROM in the CD-RW drive and close the LCD panel.
10. At the HAFM server's Windows 2000 desktop, click **Start** at the left side of the task bar, then select the **Run** option. The **Run** dialog box displays.
11. At the **Run** dialog box, type D: \hpServerInstall in the **Open** field.
12. Click **OK**. A series of message boxes appear as the *InstallAnywhere* third-party application prepares to install the HAFM software, followed by the **HP High Availability Fabric Management Applications** dialog box.
13. Follow the online instructions for the *InstallAnywhere* program. Click **Next**, **Install**, or **Done** as appropriate.
14. Remove the *High Availability Fabric Management Applications* CD-ROM from the CD-RW drive.
15. Insert HAFM data directory backup CD-ROM (created while performing "[Back Up the HAFM Server](#)" on page 80) in the CD-RW drive and close the LCD panel.
16. Copy the contents of the CD-ROM to the C : \HAFMData directory on the HAFM server's hard drive.
17. Power off and reboot the HAFM server.
 - a. At the Windows 2000 desktop, click **Start** at the left side of the task bar (bottom of the desktop), then select **Shut Down**. The **Shut Down Windows** dialog box displays.

- b. Select the **Restart** option from the list box and click **OK**. The HAFM server powers down and restarts. During the reboot process the LAN connection between the HAFM server and browser-capable PC drops momentarily, and the TightVNC viewer displays a network error.
- c. After the HAFM server reboots, click **Login again**. The **VNC Authentication** screen displays.
- d. Type the password and click **OK**. The **Welcome to Windows** dialog box displays.

Note: The default TightVNC viewer password is **password**.

- e. Click the **Send Ctrl-Alt-Del** button at the top of the window to log on to the HAFM server desktop. The **Log On to Windows** dialog box displays.

Note: Do not simultaneously press the **Ctrl**, **Alt**, and **Delete** keys. This action logs the user on to the browser-capable PC, not the rack-mount HAFM server.

- f. Type the Windows 2000 user name and password and click **OK**. The HAFM server's Windows 2000 desktop opens and the **HAFM Login** dialog box displays.

Note: The default Windows 2000 user name is **Administrator** and the default password is **password**. The user name and password are case-sensitive.

- g. Type the HAFM user name and password and select an HAFM server from the **HAFM Server** drop-down list.

Note: The default HAFM user name is **Administrator** and the default password is **password**. The user name and password are case-sensitive.

- h. Click **Login**. The HAFM application opens and the **Products View** displays.

Rack Mount Instructions

4

The one unit high (1U) HAFM server can be installed in a customer-supplied cabinet as long as the following requirements are met:

- The mounting standard-to-mounting standard cabinet depth must be from 18 inches to 32 inches to accommodate the rack mount kit. The HP rack mount kit must be used to install the server.
- It is the customer's responsibility to accurately calculate power requirements for the server and switches installed in the cabinet. HP is not responsible for power-related problems resulting from equipment installed in a customer-supplied cabinet.

This document provides a list of tools required, bill of materials, and installation instructions.

Tools Required

Tools required to install the server and associated hardware include a:

- #2 Phillips screwdriver.
- 5/16 open-end wrench.
- Tape measure.

Kit Contents

The 1U server rack-mount kit contains:

- These installation instructions.
- One slide assembly and one hardware kit, containing:
 - Two (2) front brackets that attach to the cabinet (20 inches).
 - Two (2) rear brackets (long) that attach to the cabinet (15.25 inches).
 - Two (2) optional rear brackets (short) that attach to the cabinet (3.0 inches).
 - One (1) left slide rail that attaches to the server (19.25 inches).
 - One (1) right slide rail that attaches to the server (19.25 inches).
 - Two (2) two-hole bar nuts for bolting the front and rear brackets together.
 - Four (4) three-hole bar nuts for attaching the brackets to the rack-mounting standards.
 - Mounting screws:
 - Ten (10) pan-head Phillips screws (#10 x 1/2) with split lock and flat washers that secure the bracket assemblies to the vertical rack-mounting standards.
 - Ten (10) square alignment washers (required only for HP 9000, 10000 and 11000 series racks).
 - Ten (10) pan-head Phillips screws (M4 x 10 centimeter) with split lock and flat washers that secure the slide rails to the server.
 - Four (4) flat-head Phillips machine screws (#8 x 7/16) that secure the two-hole bar nuts, front brackets, and rear brackets.
 - Two (2) hexagonal-nut standoffs.

Figure 78 illustrates the front and rear brackets, slide rails, and bar nuts.

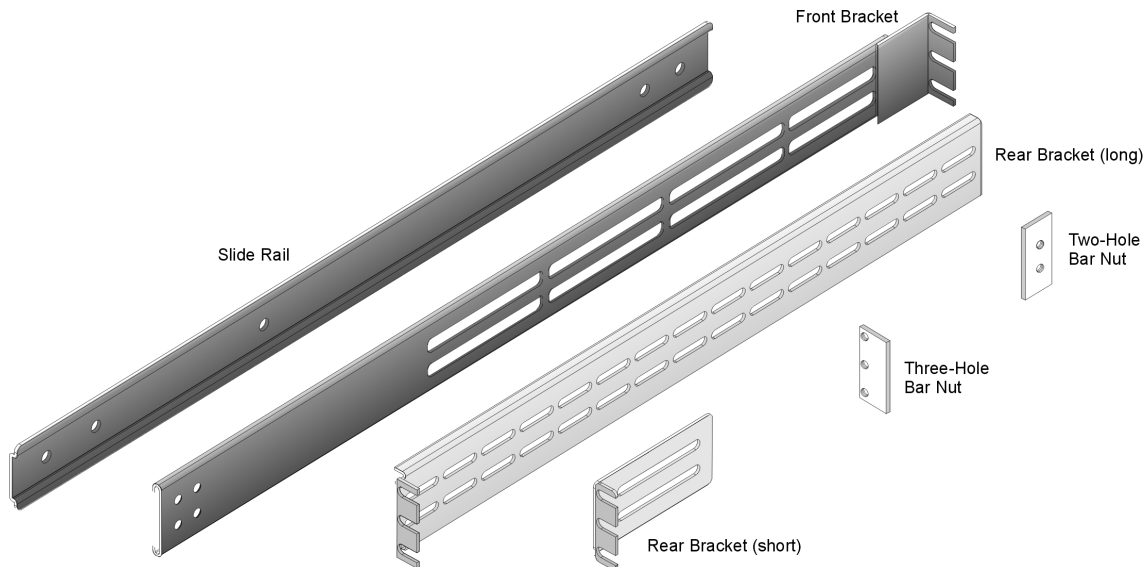


Figure 78: Mounting brackets, slide rails, and bar nuts

Figure 79 illustrates the mounting screws.

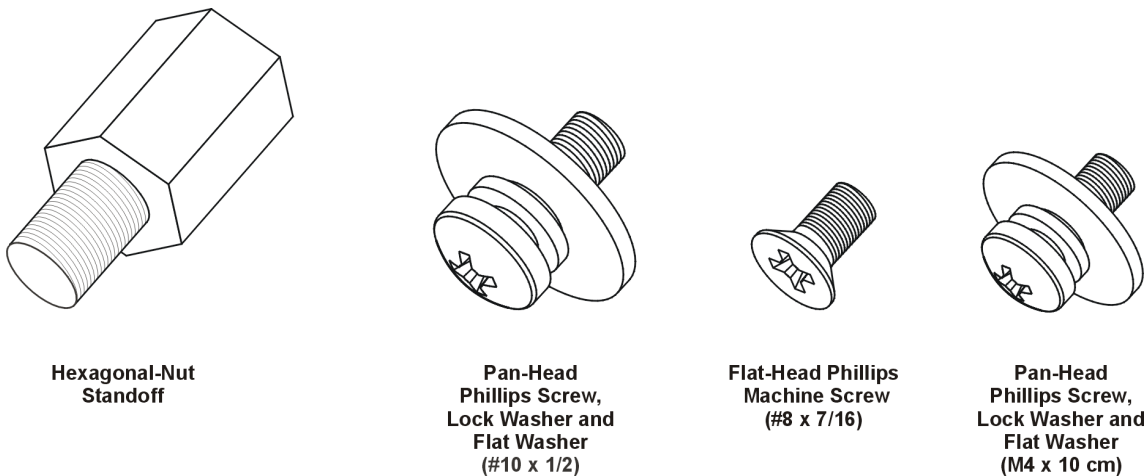


Figure 79: Hexagonal-nut standoff and mounting screws

Rack Mount the HAFM Server

This section describes procedures to:

- Assemble and attach the front and rear brackets to the equipment cabinet.
- Attach the left and right slide rails to the server.
- Install the server in the equipment cabinet.

Attach Front and Rear Brackets

To assemble the front and rear brackets and attach the assemblies to the equipment cabinet:

1. Consult with the customer and determine the cabinet installation position for the server. The server is 1.75 inches or one rack unit (1U) high.
2. The depth of the equipment cabinet determines if the long rear mounting bracket or short rear mounting bracket is used.
 - a. Using a tape measure (provided by installation personnel), measure and record the depth of the left side of the cabinet from the inside of the front vertical rack-mounting standard to the inside of the rear vertical rack-mounting standard.
 - b. Measure and record the depth of the right side of the cabinet from the inside of the front vertical rack-mounting standard to the inside of the rear vertical rack-mounting standard.
3. Using a #2 Phillips screwdriver and eight (8) of the ten pan-head Phillips screws (#10 x 1/2) and, if you are installing the server in an HP 9000, 10000 or 11000 rack, eight (8) square alignment washers, attach four (4) three-hole bar nuts to the rack-mounting standards as follows:
 - a. Align each three-hole bar nut with the rack-mounting standard as shown in [Figure 80](#). Ensure each bar nut is mounted on the inside of the rack-mounting standard with narrow side (drilled holes-to-edge side) facing to the inside of the cabinet.

Note: Ensure the bar nut screw washers do not overlap the inside edges of the rack-mounting standards and mounting brackets. Washer overlap may interfere with slide rail operation.

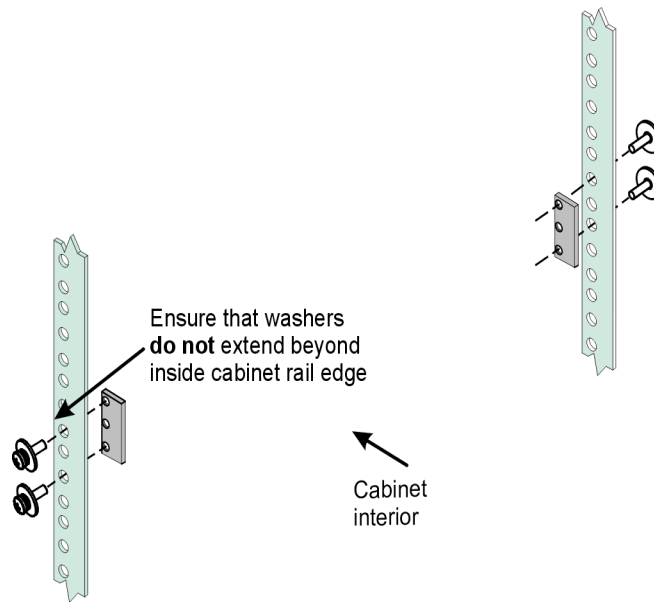


Figure 80: Three-hole bar nut alignment

Note: Figure 80 depicts the right-side rails of the cabinet. This figure does not depict the square alignment washers required if you are installing the bar nuts in an HP 9000, 10000, or 11000 series cabinet.

- b. Attach each bar nut using two screws (first and third holes) per nut.

Note: If you are installing the bar nuts on an HP 9000, 10000, or 11000 series cabinet, add a square alignment washer to each screw, orienting the protruding alignment bumps with the rack-mounting standard.

- c. Partially tighten each screw, leaving enough space for the front and rear bracket flanges to insert between the rack-mounting standards and bar nuts.

4. Depending on the cabinet depth measured in [step 2](#), attach each front bracket to a rear (short or long) bracket. If the cabinet depth is *under 22 inches*, use one front bracket and one *short* rear bracket. If the cabinet depth is *over 22 inches*, use one front bracket and one *long* rear bracket.

Be sure to choose the slots in the rear bracket which will result in the length of the combined front and rear bracket to match the cabinet depth measured in [step 2](#).

- a. Using a #2 Phillips screwdriver and two (2) flat-head Phillips machine screws (#8 x 7/16) per bracket assembly, connect a front and rear bracket together with a two-hole bar nut as show in [Figure 81](#).

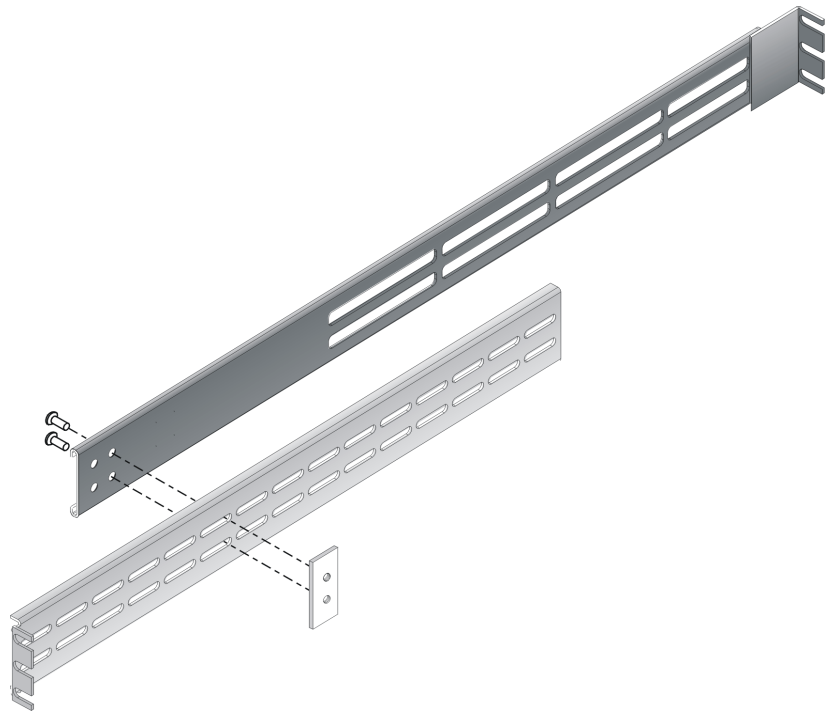


Figure 81: Front and rear bracket assembly

Partially tighten each screw so that the assembly is held together but not completely secure. This allows for slight adjustment of the bracket length during installation in the cabinet.

- b. Ensure the left and right bracket assembly lengths are equal to the cabinet depths recorded in [step 2](#).

5. Attach each bracket assembly to the rack-mounting standards as shown in [Figure 82](#). If the server mounts through the front of the cabinet, ensure the front bracket portion of the assembly faces the cabinet front.

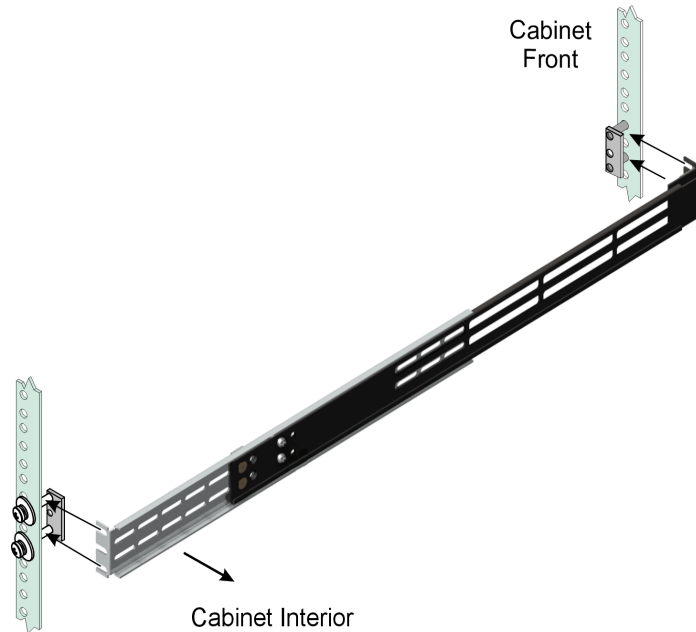


Figure 82: Bracket installation

- a. Slide the mounting bracket flanges between the bar nuts and rack-mounting standards. Adjust the overall length of each bracket assembly if required.
- b. To allow tolerance for server installation, tighten the three-hole bar nut screws (bracket-to-rack mounting standard) so the brackets are stable, but can be moved laterally.

Note: Ensure the bar nut screw washers do not overlap the inside edges of the rack-mounting standards and mounting brackets. Washer overlap may interfere with slide rail operation.

- c. Using a #2 Phillips screwdriver, securely tighten the bar nut screws (two per bracket assembly, four total) that connect the front and rear brackets.

Install Slide Rails

To attach the left and right slide rails to the server:

1. As shown in [Figure 83](#), attach the left and right slide rails to the server with ten (10) pan-head Phillips screws (M4 x 10 cm). Use five (5) screws per side. Ensure the screws are securely tightened.

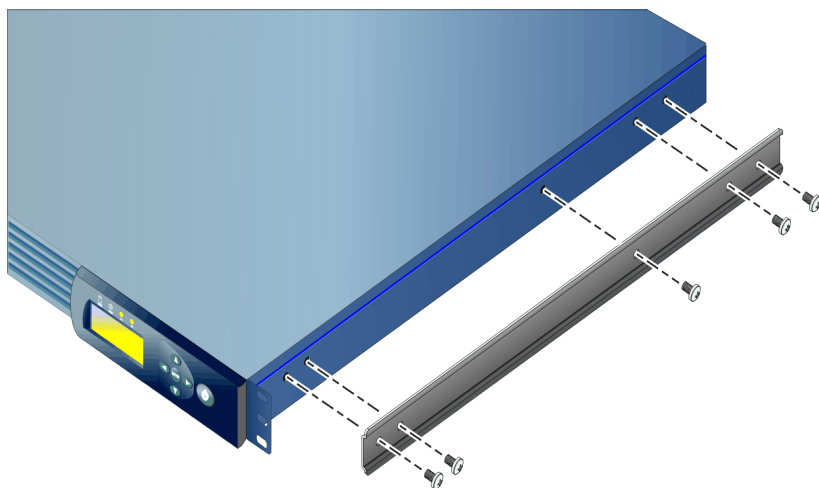


Figure 83: Slide rail installation

Install Server

To install the server in the equipment cabinet:

1. If the front bracket portions of the bracket assemblies are installed at the front of the cabinet (typical installation), install the server through the cabinet front.
2. While fully supporting the server, slide the server and attached slide rails into the mounting brackets as shown in [Figure 84](#).

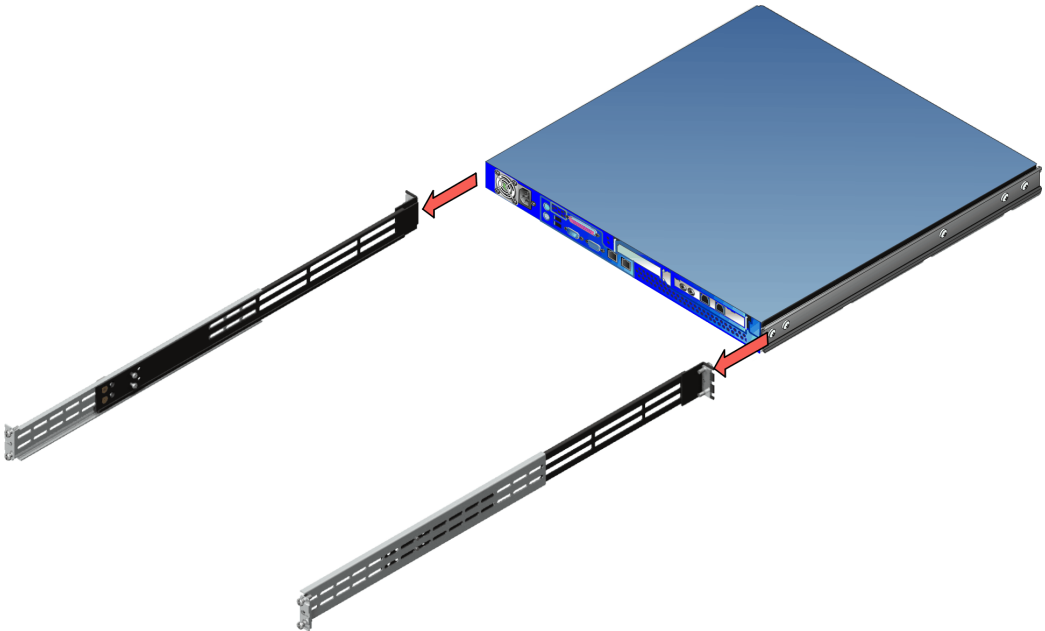


Figure 84: Server installation

3. Using a #2 Phillips screwdriver, securely tighten the bar nut screws (four per assembly, eight total) that connect the bracket assemblies to the rack-mounting standards.
4. Install one hexagonal-nut standoff per side (two total) to prevent the server from moving. At the front of the server (as shown in [Figure 85](#)), screw a standoff through the remaining (center) hole where each three-hole bar nut attaches to the rack-mounting standard. Secure each standoff with a 5/16 open-end wrench.

Note: If you are installing the server in an HP 9000, 10000, or 11000 series rack you will also need to install a square alignment washer with each hexagonal-nut standoff.

5. As shown in [Figure 85](#), use the two (2) remaining pan-head Phillips screws (#10 x 1/2) to secure the server rack-mount ears (factory-installed on the server) to the hexagonal-nut standoffs. Secure the screws with a #2 Phillips screwdriver.

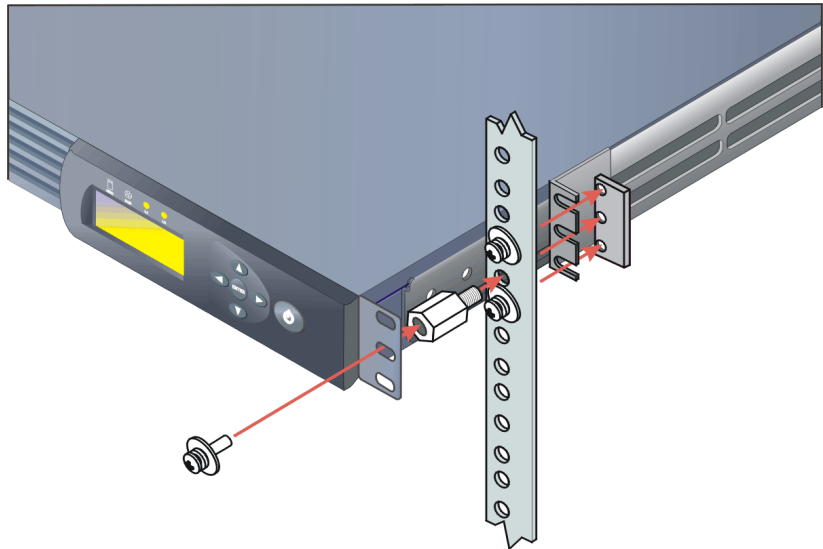


Figure 85: Install hexagonal-nut standoffs and securing screws

Note: [Figure 85](#) does not depict the square alignment washers required between the hexagonal-nut standoff and rack standard in an HP 9000, 10000, or 11000 series cabinet

6. Proceed to [“Connect the HAFM Server”](#) on page 22.

Regulatory Compliance Notices



This appendix covers the following topics:

- [Regulatory Compliance ID Numbers](#), page 100
- [Federal Communications Commission Notice](#), page 101
- [Canadian Notice \(Avis Canadien\)](#), page 104
- [European Union Notice](#), page 105
- [Japanese Notice](#), page 106
- [Taiwanese Notice](#), page 107
- [German Noise Declaration](#), page 108
- [Electrostatic Discharge](#), page 109
- [Grounding Methods](#), page 110
- [FCC Part 68 Notice](#), page 111
- [Canadian DOC Notice](#), page 112
- [R&TTE Directive](#), page 113
- [Declaration of Conformity](#), page 114

Regulatory Compliance ID Numbers

For the purpose of regulatory compliance certifications and identification, your HP StorageWorks High Availability Fabric Manager (HAFM) server is assigned a Hewlett-Packard Regulatory Model Number. The Hewlett-Packard Regulatory Model Number for this product is:

BOISA-0304

The HP StorageWorks HAFM server Regulatory Model Number can be found on the product label, along with the required approval markings and information. When requesting certification information for this product, always refer to this Regulatory Model Number. This Regulatory Model Number should not be confused with the marketing name or product number for your HAFM server.

Federal Communications Commission Notice

Part 15 of the Federal Communications Commission (FCC) Rules and Regulations has established Radio Frequency (RF) emission limits to provide an interference-free radio frequency spectrum. Many electronic devices, including computers, generate RF energy incidental to their intended function and are, therefore, covered by these rules. These rules place computers and related peripheral devices into two classes, A and B, depending upon their intended installation. Class A devices are those that may reasonably be expected to be installed in a business or commercial environment. Class B devices are those that may reasonably be expected to be installed in a residential environment (i.e., personal computers). The FCC requires devices in both classes to bear a label indicating the interference potential of the device as well as additional operating instructions for the user.

The rating label on the device shows which class (A or B) the equipment falls into. Class B devices have an FCC logo or FCC ID on the label. Class A devices do not have an FCC logo or FCC ID on the label. Once the class of the device is determined, refer to the following corresponding statement.

Class A Equipment

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at personal expense.

Class B Equipment

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this

equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

Declaration of Conformity for Products Marked with FCC Logo—U.S. Only

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For questions regarding your product, refer to <http://www.hp.com>.

For questions regarding this FCC declaration, contact:

Hewlett-Packard Company
Product Regulations Manager
3000 Hanover St.
Palo Alto, CA 94304

Or call 1-650-857-1501

To identify this product, refer to the part, Regulatory Model Number, or product number found on the product.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Hewlett-Packard Company may void the user's authority to operate the equipment.

Network and Serial Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods in order to maintain compliance with FCC Rules and Regulations.

IEC EMC Statement (Worldwide)

This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

Spécification ATI Classe A (France)

DECLARATION D'INSTALLATION ET DE MISE EN EXPLOITATION d'un matériel de traitement de l'information (ATI), classé A en fonction des niveaux de perturbations radioélectriques émis, définis dans la norme européenne EN 55022 concernant la Compatibilité Electromagnétique.

Canadian Notice (Avis Canadien)

Class A Equipment

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Class B Equipment

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

European Union Notice



Products with the CE Marking comply with both the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms (the equivalent international standards are in parenthesis):

- EN 55022 (CISPR 22) - Electromagnetic Interference
- EN55024 (IEC61000-4-2, IEC61000-4-3, IEC61000-4- 4, IEC61000-4-5, IEC61000-4-6, IEC61000-4-8, IEC61000-4-11) - Electromagnetic Immunity
- Power Quality:
 - EN61000-3-2 (IEC61000-3-2) - Power Line Harmonics
 - EN61000-3-3 (IEC61000-3-3) - Power Line Flicker
- EN 60950 (IEC 60950) - Product Safety
- Also approved under UL 1950, 3rd Edition/CSA C22.2 No. 950-95, Safety of Information Technology Equipment

Japanese Notice

ご使用になっている装置にVCCIマークが付いていましたら、次の説明文をお読み下さい。

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。

取扱説明書に従って正しい取り扱いをして下さい。

VCCIマークが付いていない場合には、次の点にご注意下さい。

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

Taiwanese Notice

警告使用者：這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

German Noise Declaration

Schalldruckpegel $L_p = 64.4 \text{ dB(A)}$
Am Arbeitsplatz (operator position)
Normaler Betrieb (normal operation)
Nach ISO 7779:1988 / EN 27779:1991 (Typprüfung)

Electrostatic Discharge

To prevent damage to the system, be aware of the precautions you need to follow when setting up the system or handling parts. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

To prevent electrostatic damage, observe the following precautions:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always make sure you are properly grounded when touching a static-sensitive component or assembly.

Grounding Methods

There are several methods for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:

- Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm +/- 10 percent resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.
- Use heel straps, toe straps, or bootstraps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
- Use conductive field service tools.
- Use a portable field service kit with a folding static-dissipating work mat.

If you do not have any of the suggested equipment for proper grounding, have an Authorized HP Reseller install the part.

Note: For more information on static electricity, or assistance with product installation, contact your Authorized HP Reseller.

FCC Part 68 Notice

This notice is applicable to products fitted with USA modems.

The modem complies with Part 68 of the FCC Rules. On this equipment is a label that contains, among other information, the FCC registration number and Ringer Equivalence Number (REN) for this equipment. You must, upon request, provide this information to your telephone company.

If your telephone equipment causes harm to the telephone network, the Telephone Company may discontinue your service temporarily. If possible, they will notify in advance. But, if advance notice is not practical, you will be notified as soon as possible.

You will be informed of your right to file a complaint with the FCC.

Your telephone company may make changes in its facilities, equipment, operations, or procedures that could affect proper operation of your equipment. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service.

The FCC prohibits this equipment to be connected to party lines or coin-telephone service.

The FCC also requires the transmitter of a FAX transmission be properly identified (per FCC Rules Part 68, Sec. 68.381 (c) (3)).

Canadian DOC Notice

This notice is applicable for products fitted with an Industry Canada-compliant modem.

The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. The Department does not guarantee the equipment will operate to the user satisfaction.

Before installing this equipment, users ensure that it is permissible to be connected to the facilities of the local Telecommunications Company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions might not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present are connected together. This precaution may be particularly important in rural areas.



Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

NOTICE: The Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the sum of the Load Numbers of all the devices does not exceed 100.

R&TTE Directive



This directive is applicable to products fitted with European modems.

This modem does not require any physical and/or software additional switch settings from the User and is suitable for use only on telephone lines provided with Multi-Frequency Dialing facilities.

The equipment has been approved in accordance with Council Decision 99/5/EC on radio equipment and terminal telecommunication equipment and the mutual recognition of their conformity.

Declaration of Conformity

The Declaration of Conformity is shown below.

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <small>invent</small> | DECLARATION OF CONFORMITY <small>According to ISO/IEC Guide 22 and EN 45014</small> |
| Manufacturer's Name: | Hewlett-Packard Company |
| Manufacturer's Address: | 11311 Chinden Blvd. Boise, ID 83714 USA |
| Declares, that the product Product Name: | hp StorageWorks High Availability Fabric Manager (HAFM) Server |
| Product Number: | 335701-B21 and DS-DMAEE-AA |
| Regulatory Model Number: | BOISA-0304 |
| Product Options: | All |
| Conforms to the following Product Specifications: | |
| Safety: | IEC 60950:1999 / EN 60950:2000 GB 4943: 1995 IEC 60825-1:1993+A1 / EN 60825-1:1994+A11, Class 1 (Laser/LED) |
| EMC: | CISPR 22:1997 / EN 55022:1998 Class A ¹ GB 9254: 1988 CISPR 24:1997 / EN 55024:1998 IEC 61000-3-2:1995 / EN 61000-3-2:1995+A14 IEC 61000-3-3:1994 / EN 61000-3-3:1995 |
| Telecom: | TBR 21:1998 |
| Supplementary Information: | |
| The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC, the EMC Directive 89/336/EEC, and the R&TTE Directive 1999/5/EC (Annex II) and carries the CE-marking accordingly. | |
| 1) The Product was tested in a worst-case configuration which maximizes RFI emissions. | |
| Boise, ID USA August 4, 2003 |  Mac McClendon, Regulatory Mgr. |
| | |
| <small>European contact for regulatory topics only: Hewlett-Packard GmbH, HQ-TRE, Henneberger Strasse 140, and D-71034 Böblingen (FAX: + 49-7031-14-3143)</small> | |

Install or Upgrade HAFM Software



This section describes the procedure to install or upgrade the HAFM application to the rack-mount HAFM server. The HAFM application includes the switch Product Manager and HAFM services applications.

Note: The procedures in this section supercede the procedures described in the Repair Information chapter of the HP Storage Works Edge Switch and Director service guides.

The HAFM application shipped with the switch is provided on the HAFM Applications CD-ROM. Subsequent software versions for upgrading the switch are provided to customers through the HAFM Applications CD-ROM or through Hewlett-Packard's home page.

Note: When installing or upgrading a software version, follow all procedural information in the release notes or instructions that accompany the software version. This information supplements information in this general procedure.

Note: During an HAFM application upgrade, HAFM monitoring of managed Directors and Edge Switches is temporarily interrupted. Operational states of managed Directors and Edge Switches are not affected.

To install or upgrade the HAFM application and associated applications to the HAFM server:

1. Log out of all HAFM application sessions (local and remote) and exit the HAFM application.
2. Insert the HAFM Applications CD-ROM into the CD-ROM drive of the HAFM server.

3. At the HAFM server, click **Start** at the Windows task bar. The **Windows Workstation** menu displays.
4. At the **Windows Workstation** menu, select **Run**. The **Run** dialog box displays.

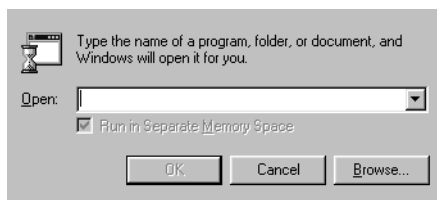


Figure 86: Windows Run dialog box

5. At the **Run** dialog box, select directory path (hard drive or CD-ROM drive) and filename of the executable file (HAFM_ServerInstall.exe) using the **Browse** button. The directory path and filename display in the **Open** field.
6. Click **OK**. A series of message boxes appear as the *InstallAnywhere* third-party application prepares to install the HAFM application software, followed by the **HAFM Install** dialog box.

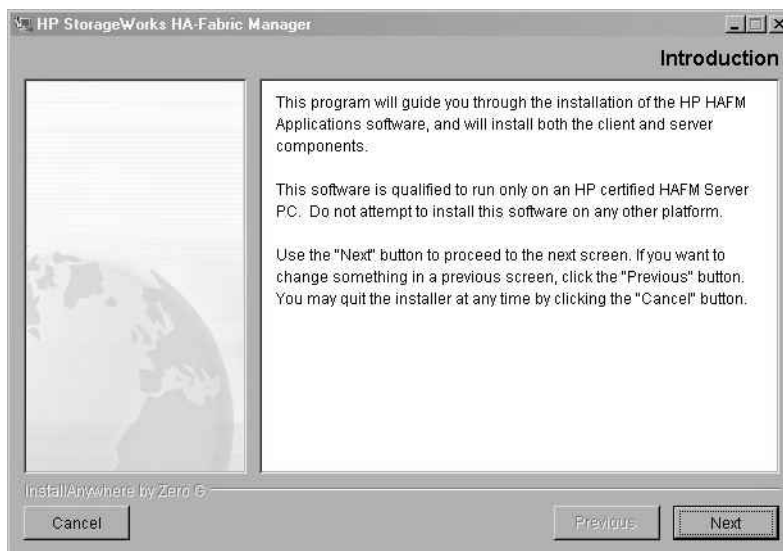


Figure 87: HAFM Install dialog box

7. Follow the online instructions for the *InstallAnywhere* program. Click **Next**, **Install**, or **Done** as appropriate.
8. Reboot the rack-mount HAFM server.
 - a. At the Windows 2000 desktop, click **Start** at the left side of the task bar (bottom of the desktop), then select **Shut Down**. The **Shut Down Windows** dialog box displays.
 - b. Select the **Restart** option from the list box and click **OK**. The HAFM server powers down and restarts. During the reboot process the LAN connection between the HAFM server and browser-capable PC drops momentarily, and the TightVNC viewer displays a network error.
 - c. After the HAFM server reboots, click **Login again**. The **VNC Authentication** screen displays.
 - d. Type the password and click **OK**. The **Welcome to Windows** dialog box displays.

Note: The default TightVNC viewer password is **password**. If required, obtain the user name and password from the customer or next level of support.

- e. Click the **Send Ctrl-Alt-Del** button at the top of the window to log on to the HAFM server desktop. The **Log On to Windows** dialog box displays.

Note: Do not simultaneously press the **Ctrl**, **Alt**, and **Delete** keys. This action logs the user on to the browser-capable PC, not the rack-mount HAFM server.

- f. Type the Windows 2000 user name and password and click **OK**. The HAFM server's Windows 2000 desktop opens and the **HAFM Login** dialog box displays.
 - g. Verify the correct HAFM software version number is displayed in the **HAFM Login** dialog box.

Note: The default Windows 2000 user name is **Administrator** and the default password is **password**. The user name and password are case-sensitive.

- h. Type the HAFM user name and password and select an HAFM server from the **HAFM Server** drop-down list.

Note: The default HAFM user name is **Administrator** and the default password is **password**. The user name and password are case-sensitive.

9. Click **Login**. The HAFM application opens and the **Products View** displays.

HAFM Server Diagnostics



This appendix describes diagnostic procedures used by service representatives to isolate 1U HAFM server-related problems or failures.

Note: The Maintenance Analysis Procedure (MAP) steps described in this appendix supercede the steps provided in the MAPs listed in the Diagnostics chapter of the service guides for each Director and Edge Switch. These MAP steps have been revised to detail information specific to the 1U rack-mount HAFM server.

Continue to use the existing MAP steps in the service guides to diagnose issues not specifically related to the HAFM server.

[Table 3](#) lists the revised MAPs in this appendix.

Table 3: MAP Summary

| MAP | Page |
|--------------------------------------------------------------------|----------|
| MAP 0000: Start MAP | page 120 |
| MAP 0300: Server Application Problem Determination | page 122 |
| MAP 0400: Loss of Server Communication | page 126 |
| MAP 0800: Server Hardware Problem Determination | page 128 |

MAP 0000: Start MAP

Substitute the following procedure for the one described in Step 6 of MAP 0000: Start MAP in Director or Edge Switch service guides.

6

Reboot the HAFM server.

1. At the Windows 2000 desktop, click **Start** at the left side of the task bar (bottom of the desktop), then select **Shut Down**. The **Shut Down Windows** dialog box displays.
2. Select the **Shut Down** option from the list box and click **OK**. The HAFM server powers down.
3. Wait approximately 30 seconds and press the power button on the liquid crystal display (LCD) panel to power on the server and perform power-on self-tests (POSTs). During POSTs:
 - a. The green LCD panel illuminates.
 - b. The green hard disk drive (**HDD**) LED blinks momentarily, and processor speed and random-access memory information display momentarily at the LCD panel.
 - c. After a few seconds, the LCD panel displays the following message pertaining to boot sequence selection ([Figure 88](#)):

Boot from LAN?
Press <Enter>

Figure 88: LCD panel during boot sequence

- d. Ignore the message. After ten seconds, the server performs the boot sequence from the basic input/output system (BIOS). During the boot sequence, the server performs additional POSTs and displays the following operational information at the LCD panel:
 - Host name.
 - System date and time.
 - LAN 1 and LAN 2 IP addresses.
 - Central processing unit (CPU) temperature.

- Hard disk capacity.
 - Virtual and physical memory capacity.
4. After successful POST completion, the LCD panel displays a **Welcome!!** message, then continuously cycles through and displays server operational information.
 5. After rebooting the server at the LCD panel, log on to the HAFM server's Windows 2000 desktop through a LAN connection to a browser-capable PC. Refer to "[Access the HAFM Server Desktop](#)" on page 38 for instructions. The HAFM Management Services and HAFM applications start and the **HAFM Login** dialog box displays.
 6. At the **HAFM Login** dialog box, type a user name, password, and HAFM server name, and click **Login**. The application opens and the **Products View** displays.

Did the **Products View** display and does the HAFM application appear operational?

YES

NO



An HAFM server hardware problem is indicated. Event codes are not recorded. Go to "[MAP 0800: Server Hardware Problem Determination](#)" on page 128. Exit MAP.

The HAFM server appears operational. Exit MAP.

MAP 0300: Server Application Problem Determination

Substitute the following MAP steps for the one described in MAP 0300: Server Application Problem Determination in Director and Edge Switch service guides:

- Step 1
- Step 2
- Step 3

1

Did the rack-mount HAFM server lock up or crash without displaying a warning or error message?

YES NO

↓

Go to step 4 of MAP 0300 in the appropriate Director or Edge Switch service guide.

2

An application or operating system problem is indicated. Close the HAFM application (at the browser-capable PC connected through an Ethernet LAN segment to the HAFM server).

1. At the HAFM server's Windows 2000 desktop, click the **Send Ctrl-Alt-Del** button at the top of the window. The **Windows Security** dialog box displays (Figure 89).

Note: Do not simultaneously press the **Ctrl**, **Alt**, and **Delete** keys. This action controls the browser-capable PC, not the rack-mount HAFM server.



Figure 89: Windows Security dialog box

2. Click **Task Manager**. The **Windows Task Manager** dialog box displays with the **Applications** page open by default (Figure 90).

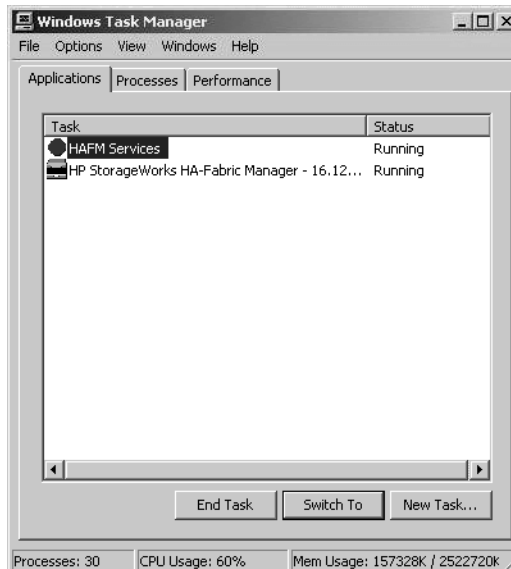


Figure 90: Windows Task Manager dialog box (Applications page)

3. Select (highlight) the **HP StorageWorks HA-Fabric Manager** entry and click **End Task**. The HAFM application closes.

Continue to the next step.

3

Attempt to clear the problem by rebooting the HAFM server.

1. At the Windows 2000 desktop, click **Start** at the left side of the task bar (bottom of the desktop), then select **Shut Down**. The **Shut Down Windows** dialog box displays.
2. Select the **Shut Down** option from the list box and click **OK**. The HAFM server powers down.
3. Wait approximately 30 seconds and press the power button on the LCD panel to power on the server and perform POSTs. During POSTs:
 - a. The green LCD panel illuminates.
 - b. The green **HDD** LED blinks momentarily, and processor speed and random-access memory information display momentarily at the LCD panel.
 - c. After a few seconds, the LCD panel displays the following message pertaining to boot sequence selection ([Figure 88](#)).
 - d. Ignore the message. After ten seconds, the server performs the boot sequence from the BIOS. During the boot sequence, the server performs additional POSTs and displays the following operational information at the LCD panel:
 - Host name.
 - System date and time.
 - LAN 1 and LAN 2 IP addresses.
 - CPU temperature.
 - Hard disk capacity.
 - Virtual and physical memory capacity.
4. After successful POST completion, the LCD panel displays a **Welcome ! !** message, then continuously cycles through and displays server operational information.
5. After rebooting the server at the LCD panel, log on to the HAFM server's Windows 2000 desktop through a LAN connection to a browser-capable PC. Refer to "[Access the HAFM Server Desktop](#)" on page 38 for instructions. The HAFM Management Services and HAFM applications start and the HAFM Login dialog box displays.

6. At the **HAFM Login** dialog box, type a user name, password, and HAFM server name, and click **Login**. The application opens and the **Products View** displays.

Did the **Products View** display and does the HAFM application appear operational?

NO YES

↓ The problem is transient and the HAFM server appears operational.
Exit MAP.

Contact the next level of support. Exit MAP.

MAP 0400: Loss of Server Communication

Substitute the following MAP steps for the one described in MAP 0400: Loss of Server Communication in Director and Edge Switch service guides:

- Step 16
- Step 19

16

Upgrade the HAFM application. Refer to “[Install or Upgrade HAFM Software](#)” on page 115.

Did the switch-to-server Ethernet connection recover?

NO YES

↓ The switch-to-server connection is restored and appears operational.
Exit MAP.

Contact the next level of support. Exit MAP.

19

Determine the internet protocol (IP) address of the HAFM server running the first instance of the HAFM application.

1. After the HAFM server powers on and successfully completes POSTs, the LCD panel displays a `Welcome!!` message, then continuously cycles through and displays the following operational information:
 - Host name.
 - System date and time.
 - LAN 1 and LAN 2 IP addresses.
 - CPU temperature.
 - Hard disk capacity.
 - Virtual and physical memory capacity.
2. After a few seconds, the LCD panel displays the following ([Figure 91](#)):

LAN 2:
010.001.001.001

Figure 91: LCD panel (LAN 2 IP address)

3. Depending on switch-to-server LAN connectivity, record the appropriate IP address (LAN 1 or LAN 2).

Continue to the next step in the appropriate service guide for the Director or Edge Switch.

MAP 0800: Server Hardware Problem Determination

Substitute the following MAP steps for the one described in MAP 0800: Server Hardware Problem Determination in Director and Edge Switch service guides:

- Step 3
- Step 4
- Step 6
- Step 7
- Step 8
- Step 9

3

Reboot the HAFM server.

1. At the Windows 2000 desktop, click **Start** at the left side of the task bar (bottom of the desktop), then select **Shut Down**. The **Shut Down Windows** dialog box displays.
2. Select the **Shut Down** option from the list box and click **OK**. The HAFM server powers down.
3. Wait approximately 30 seconds and press the power button on the liquid crystal display (LCD) panel to power on the server and perform power-on self-tests (POSTs). During POSTs:
 - a. The green LCD panel illuminates.
 - b. The green hard disk drive (**HDD**) LED blinks momentarily, and processor speed and random-access memory information display momentarily at the LCD panel.
 - c. After a few seconds, the LCD panel displays the following message pertaining to boot sequence selection ([Figure 92](#)):

Boot from LAN?
Press <Enter>

Figure 92: LCD panel during boot sequence

- d. Ignore the message. After ten seconds, the server performs the boot sequence from the basic input/output system (BIOS). During the boot sequence, the server performs additional POSTs and displays the following operational information at the LCD panel:
 - Host name.
 - System date and time.
 - LAN 1 and LAN 2 IP addresses.
 - Central processing unit (CPU) temperature.
 - Hard disk capacity.
 - Virtual and physical memory capacity.
4. After successful POST completion, the LCD panel displays a `Welcome!!` message, then continuously cycles through and displays server operational information.

Did POSTs detect a problem?

NO

YES



A computer hardware problem exists. Refer to the supporting documentation shipped with the server for instructions on resolving the problem. Exit MAP.

4

After rebooting the server at the LCD panel, log on to the HAFM server's Windows 2000 desktop through a LAN connection to a browser-capable PC. Refer to "[Access the HAFM Server Desktop](#)" on page 38 for instructions. The HAFM Management Services and HAFM applications start and the HAFM Login dialog box displays.

Did the **HAFM Login dialog box** display?

NO

YES



The HAFM server appears operational. Exit MAP.

Additional analysis for the failure is not described in this MAP. Contact the next level of support. Exit MAP.

6

Reboot the HAFM server.

1. At the Windows 2000 desktop, click **Start** at the left side of the task bar (bottom of the desktop), then select **Shut Down**. The **Shut Down Windows** dialog box displays.
2. Select the **Shut Down** option from the list box and click **OK**. The HAFM server powers down.
3. Wait approximately 30 seconds and press the power button on the liquid crystal display (LCD) panel to power on the server and perform power-on self-tests (POSTs). During POSTs:
 - a. The green LCD panel illuminates.
 - b. The green hard disk drive (**HDD**) LED blinks momentarily, and processor speed and random-access memory information display momentarily at the LCD panel.
 - c. After a few seconds, the LCD panel displays the following message pertaining to boot sequence selection ([Figure 93](#)):

Boot from LAN?
Press <Enter>

Figure 93: LCD panel during boot sequence

- d. Ignore the message. After ten seconds, the server performs the boot sequence from the basic input/output system (BIOS). During the boot sequence, the server performs additional POSTs and displays the following operational information at the LCD panel:
 - Host name.
 - System date and time.
 - LAN 1 and LAN 2 IP addresses.
 - Central processing unit (CPU) temperature.
 - Hard disk capacity.
 - Virtual and physical memory capacity.
4. After successful POST completion, the LCD panel displays a **Welcome!!** message, then continuously cycles through and displays server operational information.

5. After rebooting the server at the LCD panel, log on to the HAFM server's Windows 2000 desktop through a LAN connection to a browser-capable PC. Refer to "[Access the HAFM Server Desktop](#)" on page 38 for instructions. The HAFM Management Services and HAFM applications start and the HAFM Login dialog box displays.
6. At the **HAFM Login** dialog box, type a user name, password, and HAFM server name, and click **Login**. The application opens and the **Products View** displays.

Did the **Products View** display and does the HAFM application appear operational?

NO YES

↓ The HAFM server appears operational. Exit MAP.

7

Re-install the HAFM application. Refer to "[Install or Upgrade HAFM Software](#)" on page 115.

Did the HAFM application install and open successfully?

NO YES

↓ The HAFM server appears operational. Exit MAP.

8

Advise the customer and next level of support that the server hard drive should be restored to its original factory configuration. If the customer and support personnel do not concur, go to [step 9](#).

Install the Windows 2000 operating system and HAFM application. Refer to [Backup and Restore](#) on page 79 for instructions.

Did restoring Windows 2000 and the HAFM application enable HAFM to open successfully?

NO YES

↓ The server appears operational. Exit MAP.

9

Additional analysis for the failure is not described in this MAP. Contact the next level of support. Exit MAP.

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